CODE ANAI VSIS

	<u> </u>					
	ΛΕ		BLE COD	FS		
	ΛГ			LO		Vasa
In	tornational Puilding Codo	Year 2006		al Electrical Co	ndo.	Year 2005
	ternational Building Code ternational Mechanical Code	•		n Code for	oue	2003
	ternational Plumbing Code	2006	Buildin	g Conservation	n	
	ternational Fire Code	2006		ccessibility		
1	ternational Energy onservation Code	2006	Guideli	nes		
L	Occupancy and Group:	EXISTING	NATIONAL G	UARD ARMO	RY	
Λ.	Change in Use: Yes					No v
	Special Use and Occupancy					
) (° 3 ° 3	,			
B.	Seismic Design Category: _	<u>D</u>	Design Win	d Speed: _9	0 mp	h
C.	Type of Construction (circle	e one):				
		•	шш	√I∇ ∇	, ,	7
	$\frac{\mathbf{I}}{A}$ $\frac{\mathbf{I}}{B}$ $\frac{\mathbf{II}}{A}$	B	<u>m</u> <u>m</u> B	HT A	<u> </u>	<u>•</u> 3
D.	Fire Resistance Rating Re	equirements	s for the Exter	ior Walls base	ed on the	e fire
	separation distance (in hour	•				
	North: South:	East: _	West:			
E.	Mixed Occupancies: N/A	No	onseparated Us	ses:		
F:	Sprinklers:					
	Required: <u>N0</u> Provid	led: <u>N0</u>	_ Type of Sp	rinkler System	າ:	
G:	Number of Stories:2	_ Building	Height: <u>25</u>	<u> </u>		
H:	Actual Area per Floor (squ	are feet): 2	23,725 SF LO	WER, 7,715 S	SF UPPE	R FLOOR
l:	Tabular Area: N/A	, –				
J:	Area Modifications: NONE					
	a) $A_a = A_t + \left[\frac{A_t I_f}{100} \right] + \left[\frac{A_t I_f}{A_t} \right]$	$\left[\frac{1}{100}\right]$	I _f = 10	$00\left[\frac{F}{P}-0.5\right]$	$\left[\frac{W}{30}\right]$	-
	[100]			L] 30	
	b) Sum of the Ratio Calcu	lations for l	Mixed Occupa	ncies:		
	$\frac{\text{Actual Area}}{\text{Allowable Area}} \leq 1$					
	Allowable Area					
	c) Total Allowable Area for	r:				
	1) One Story:	_				
	2) Two Story: A _a (2)_					
	3) Three Story: A _a (3)				
	d) Unlimited Area Building	: Yes	No	Code S	Section:	
K.	Fire Resistance Rating Rec	quiremente	for Building E	lements (hour	e) EVIC	TING DI D
TX.	The Nesistance Nating Net	quirements	TOT Building L	ierrierits (riouis	s). EXIS	TING BLD
Ele	ement Hours	Assembly Listing	Element		Hours	Assembly Listing
Ext	terior Bearing Walls		Floors - Ceilin	•		J
1	erior Bearing Walls terior Non-Bearing Walls		Roofs - Ceilin	g Roofs s and Windows		
Str	uctural Frame		Shaft Enclosu			
	rtitions - Permanent		Fire Walls Fire Partitions			
rire	e Barriers		Smoke Partitions			
I	Design Occupant Load: EXI	STING			1	1

			Listing			Listing
	Exterior Bearing Walls Interior Bearing Walls Exterior Non-Bearing Walls Structural Frame Partitions - Permanent Fire Barriers			Floors - Ceiling Floors Roofs - Ceiling Roofs Exterior Doors and Windows Shaft Enclosures Fire Walls Fire Partitions Smoke Partitions		
l	Design Occupant Loa Exit Width Required:	nd: EXIS		Exit Width Provided: <u>N/A</u>	_	

a) Water Closets - Required (m) _____ (f) ____ Provided (m) ____ (f) ____

b) Lavatories - Required (m) _____ (f) ____ Provided (m) ____ (f) _

d) Drinking Fountains: ____ Service Sinks: ____

FOOTNOTES:

- 1) In case of conflict with the U.S. Department of Justice Federal Registers Parts I through **▼** - ADA Guidelines and specific reference to the International Building Code Accessibility Chapters, the more restrictive requirement shall govern.
- 2) Additional Code Information shall be provided at the discretion of the Building Official for Complex Buildings. Including, but not limited to:
 - a) High Rise Requirements.
- b) Atriums.
- c) Performance Based Criteria.

c) Bath Tubs or Showers: _____

- d) Means or Egress Analysis.
- e) Fire Assembly Locator Sheet.
- f) Exterior and Interior Accessibility Route.
- g) Fire Stopping, Including Tested Design Number.

M. Minimum Number of Required Plumbing Facilities: EXISTING

OGDEN ARMORY HVAC REPLACEMENT DFCM # 07181470



State of Utah—Department of Administrative Services

DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

4110 State Office Building / Salt Lake City, Utah 84114 / 538-3018

DRAWING INDEX:

M000- TITLE SHEET S1.0- ROOF FRAMING PLAN S2.0- GENERAL NOTES & DETAILS

M001- MECHANICAL LEGEND AND GENERAL NOTES

MD101- MECHANICAL DEMOLITION BASEMENT MD102- MECHANICAL DEMOLITION FIRST FLOOR

MD103- MECHANICAL DEMOLITION SECOND FLOOR

MD104- MECHANICAL DEMOLITION ROOF ME101- MECHANICAL BASEMENT

ME102- MECHANICAL FIRST FLOOR ME103- MECHANICAL SECOND FLOOR

ME104- MECHANICAL ROOF ME501- MECHANICAL DETAILS

ME502- MECHANICAL DETAILS ME601- MECHANICAL SCHEDULES ME602- MECHANICAL SCHEDULES

EG101- SYMBOLS, SCHEDULES AND NOTES

EP100- POWER PLAN BASEMENT EP101- POWER PLAN FIRST FLOOR

EP102- POWER PLAN SECOND FLOOR EP301- ELECTRICAL ROOF PLAN

EX101- ONE-LINE DIAGRAM AND PANELBOARD SCHEDULES

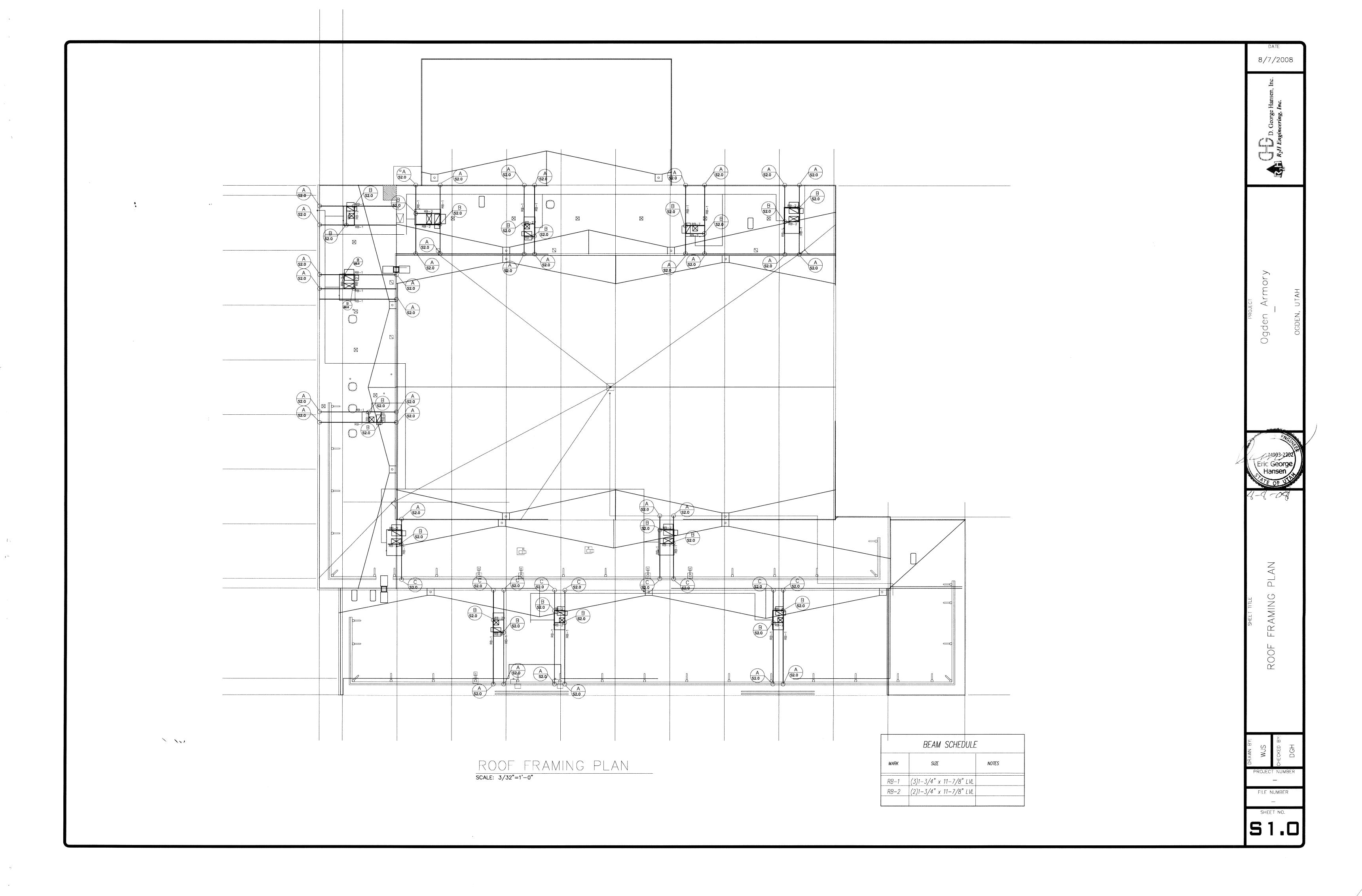
EX301- ELECTRICAL DIAGRAMS



MECHANICAL ENGINEER WHW ENGINEERING, INC. 8619 SANDY PARKWAY SUITE 101 SANDY, UTAH 84070 PHONE: (801) 466-4021 FAX: (801) 466-8536







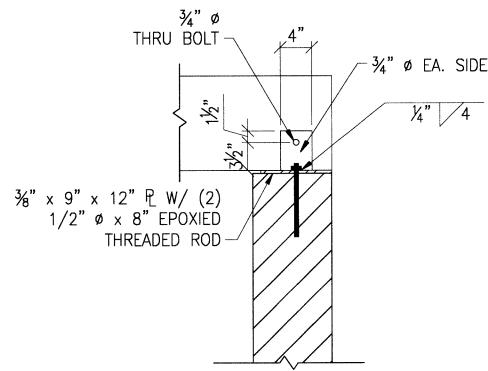
- 1. VISITS TO THE JOB SITE BY REPRESENTATIVES OF THE ENGINEER DO NOT CONSTITUTE APPROVAL OF THE WORK PERFORMED BY THE CONTRACTOR OR HIS SUBCONTRACTORS AND ARE MERELY FOR THE PURPOSE OF OBSERVING THE WORK
- 2. CONTRACTOR SHALL NOTIFY ENGINEER/ARCHITECT OF ANY DISCREPANCIES, OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS BEFORE PROCEEDING WITH ANY WORK INVOLVED. IN ALL CASES, UNLESS OTHERWISE DIRECTED, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN
- 3. CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND ELEVATIONS, ETC., AT THE SITE AND SHALL COORDINATE WORK PERFORMED BY ALL TRADES. DO NOT SCALE DRAWINGS.
- 4. SHOP DRAWINGS SHALL BE REVIEWED BY THE ENGINEER/ARCHITECT PRIOR TO FABRICATION OR ERECTION FOR ANY PREFABRICATED OR MANUFACTURER-DESIGNED COMPONENTS AND SHALL BE STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THIS STRUCTURE RESIDES.
- 5. SIZES, LOCATIONS, LOADS, AND ANCHORAGES OF EQUIPMENT SHALL BE VERIFIED IN THE FIELD WITH EQUIPMENT MANUFACTURERS (SUPPLIERS) PRIOR TO FABRICATION OR INSTALLATION OF SUPPORTING STRUCTURES.
- 6. TEMPORARY BRACING SHALL BE PROVIDED WHEREVER NECESSARY TO TAKE CARE OF ALL LOADS TO WHICH THE STRUCTURE MAY BE SUBJECTED, INCLUDING WIND. SUCH BRACING SHALL BE LEFT IN PLACE AS LONG AS MAY BE REQUIRED FOR SAFETY, OR UNTIL ALL THE STRUCTURAL ELEMENTS ARE COMPLETE.
- 7. DURING AND AFTER CONSTRUCTION THE CONTRACTOR AND/OR OWNER SHALL KEEP LOADS ON THE STRUCTURE WITHIN THE LIMITS OF THE DESIGN LOAD.
- 8. CONTRACTOR AND ALL SUBCONTRACTORS SHALL PERFORM THEIR TRADES AND DUTIES IN A MANNER CONFORMING TO THE PROCEDURES AND REQUIREMENTS AS STATED IN THE 2006 INTERNATIONAL BUILDING CODE, (OR LATEST ACCEPTED CODE ADOPTED BY THE LOCAL BUILDING OFFICIALS.
- 9. ANY SPECIAL INSPECTION REQUIRED BY THE BUILDING OFFICIAL OR THE UNIFORM BUILDING CODE ARE THE RESPONSIBILITY OF THE OWNER OR CONTRACTOR.
- 10 . CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY AND PROTECTION WITHIN AND ADJACENT TO THE JOB SITE.

1. MEMBER GRADES SHALL BE AS FOLLOWS;

GLU-LAM BEAMS...(Simple Span)......24F-V4 DF/DF (Cantilevered)......24F-V8 DF/DF DOUG FIR #2 BTR DOUG FIR #1 BTR STUDS NON-BEARING WALLS EXTERIOR...... DOUG FIR #2 BTR INTERIOR... DOUG FIR STUD GRADE BTR STUDS BEARING WALLS...... DOUG FIR #2 BTR

PRE-FAB TRUSSES/JOISTS...... AS PER MANUFACTURER SILL PLATES IN CONTACT W/CONCRETE......DOUG FIR #2 BTR (PRESSURE TREATED FOR MOISTURE PROTECTION)

- 2. WHERE NOT NOTED OTHERWISE, CONNECT ALL WOOD TO CONCRETE, WOOD TO STEEL AND WOOD TO WOOD (EXCEPT STUD TO PLATE) WITH SIMPSON METAL CONNECTORS.
- 3. ALL MULTIPLE PLATES AND LEDGERS SHALL BE NAILED TOGETHER WITH 16d NAILS AT
- 4. STUD WALLS SHALL RUN CONTINUOUS BETWEEN POINTS OF HORIZONTAL SUPPORT. PROVIDE BRACING WHERE OTHERWISE.
- 5. BLOCK ALL HORIZONTAL EDGES OF PLYWOOD WALL SHEATHING WITH 2 IN. NOMINAL BLOCKING. BLOCK EDGES OF PLYWOOD ON FLOORS AND ROOF AS DIRECTED ON
- 8. SOLID 2 IN. NOMINAL BLOCKING SHALL BE PROVIDED AT ENDS OR POINTS OF SUPPORT OF ALL WOOD JOISTS AND TRUSSES. CROSS BRIDGING OF NOT LESS THAN 1 IN. X 3 IN. MATERIAL SHALL BE PLACED IN ROWS BETWEEN SUPPORT POINTS, NOT TO EXCEED 8 FT APART, FOR SPANS OF 14 FT AND GREATER.
- 7. ALL LEDGER BOLTS SHALL HAVE PLATE WASHERS WITH A MIN DIA EQUAL TO 3 TIMES THE BOLT DIA UNLESS SHOWN OTHERWISE IN DETAILS.
- 8. MIN NAILING SHALL BE AS PER 25-Q UNIFORM BUILDING CODE. SEE ATTACHED
- 9. FASTENERS SUCH AS STAPLES, CAN ONLY BE SUBSTITUTED FOR NAILS AT A RATE EQUAL TO LOAD VALUES PROVIDED BY I.C.B.O. APPROVAL. SEE ATTACHED
- 10. TRUSSES SHALL HAVE BRIDGING & BLOCKING AS RECOMMENDED BY THE MANUFACTURER. MANUFACTURER SHALL SUPPLY AND CONTRACTOR



BEAM BEARING @ INT. WALL SCALE: 1"=1'-0"

GOVERNING CODE -----

REQUIRED SPECIAL INSPECTION

OGDEN, UTAH FOR THE MATERIAL OR CONSTRUCTION BEING INSPECTED.

SPECIAL INSPECTION SHALL BE PERFORMED BY PERSONEL CERTIFIED BY THE CITY OF

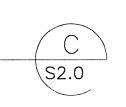
SPECIAL INSPECTIONS ARE SEPARATE FROM THE ENGINEER'S SCOPE OF WORK IN THIS

----- 90mph (3 sec. GUST)

DESIGN CRITERIA

DESIGN WIND SPEED

1. EPOXY BOLTS

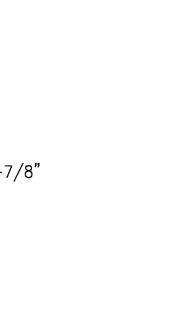


S.D.C. = D Sds = 0.52Sdl = 0.27

Fa = 1.332

Fv = 1.998

SCALE: 1"=1'-0"

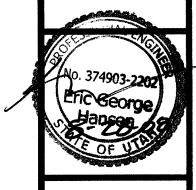


BEAM BEARING @ EXTERIOR WALL & HIGH ASSEMBLY ROOM WALL SCALE: 1"=1'-0"

-¾" ₽ EA. SIDE - ¾" × 5-½" × 5-½" 凡 -9" HIGH x 12" WIDE x ¾" P_ W/(4) ½" ø x 8" EPOXIED THREADED

Ogder

8/7/2008



 \approx \mathcal{O} GENERAL DETA

FILE NUMBER

TIMBER DECK (3)1-3/4" x 11-7/8" (2)1-3/4" x 11-7/8" LVL -SIMPSON HUTF412 HANGER

	MECHANICAL LEGEND									
SYMBOL	ABR.	DESCRIPTION	SYMBOL	ABR.	DESCRIPTION	SYMBOL	ABR.	DESCRIPTION		
		GENERAL TERMINOLOGY			AIR SIDE			WET SIDE		
A		SECTION LETTER DESIGNATION	₩ 🖶		EXISTING AIR DUCT TO BE REMOVED			PUMP		
ME-101		SECTION DRAWN ON THIS SHEET			EXISTING AIR DUCT TO REMAIN	─ ─		UNION		
A2		DETAIL NUMBER DESIGNATION CORRESPONDING WITH GRID LOCATION	고 라 는 다 다		NEW AIR DUCT RECT. TO RECT. AIR DUCT TAKE-OFF	Γ		MANUAL ACTUATOR (BALL, BUTTERFLY, NEEDLE, ETC. VALVES)		
1		MECHANICAL EQUIPMENT DESIGNATION	7 =		RECT. TO RND. AIR DUCT TAKE-OFF			CHECK VALVE		
AH		EQUIPMENT ITEM DESIGNATION	T F		RND. TO RND. AIR DUCT TAKE-OFF	-		DIRECTION OF FLOW		
CFM		REGISTER, GRILL OR DIFFUSER	<u></u>		RECT. TAKE-OFF AT END OF MAIN	—		PITCH DOWN		
D-1		DESIGNATION WITH BALANCING CFM LISTED BELOW	<u> </u>		BURIED OR UNDER FLOOR DUCT	0		ELBOW UP		
		GRILLE, OR LOUVER DESIGNATION WHERE			FLEXIBLE AIR DUCT	C		ELBOW DOWN		
R-1		BALANCING NOT REQUIRE	₺		LINED DUCT	<u> </u>		TEE UP		
<u></u>		REVISION DESIGNATOR AND NUMBER			VANED ELBOW			TEE DOWN		
1		KEY NOTE DESIGNATOR AND NUMBER			RADIUS ELBOW			EXISTING PIPING TO BE REMOVED		
	POC	POINT OF CONNECTION			CONCENTRIC DUCT TRANSITION			EXISTING PIPING TO REMAIN		
	POR	POINT OF REMOVAL			ECCENTRIC DUCT TRANSITION			NEW PIPING		
AFF		ABOVE FINISHED FLOOR	- Images		FLEXIBLE AIR DUCT CONNECTION			PIPE CAP OR PLUG		
AP		ACCESS PANEL	√D + → VD		VOLUME DAMPER	—-G—		NATURAL GAS PIPING		
မူ EL.		CENTER LINE ELEVATION	\boxtimes		SUPPLY AIR DIFFUSER		cw	CULINARY COLD WATER		
INV. ELEV.		INVERT ELEVATION			RETURN AIR, FRESH AIR, AND TRANSFER AIR		HW	CULINARY HOT WATER		
GC		GENERAL CONTRACTOR			CEILING MOUNTED EXHAUST FAN OR EXHAUST GRILLE			RECIRCULATED CULINARY HOT WATER		
МС		MECHANICAL CONTRACTOR			RETURN OR OUTSIDE AIR DUCT UP	—DR—		EQUIPMENT DRAIN		
ATC		CONTROL CONTRACTOR	⊢ ▼		SUPPLY DUCT UP		•			
EC		ELECTRICAL CONTRACTOR			EXHAUST AIR INTAKE UP					
FPC		FIRE PROTECTION CONTROL			RETURN OR OUTSIDE AIR DUCT DOWN					
NIC		NOT IN CONTRACT	 		SUPPLY DUCT DOWN					
NTS		NOT TO SCALE			EXHAUST DUCT DOWN					
VCP		VITRIFIED CLAY PIPE			ROUND DUCT UP					
С		COMMON	₩ <u>1</u>		LOWER DUCT DOWN					
NC		NORMALLY CLOSED			FLEXIBLE DUCT CONNECTION					
NO		NORMALLY OPEN			PARALLEL BLADE DAMPER					
					OPPOSED BLADE DAMPER					
					AIRFLOW MEASURING STATION					
			}		FILTER BANK					
					COIL					
				AP	ACCESS PANEL					
					EXISTING EQUIPMENT TO BE REMOVED					
					EXISTING EQUIPMENT TO REMAIN					
					NEW EQUIPMENT					
			FS	FS	FIRE & SMOKE DAMPER					
			RTU-1	T-STAT	MECHANICAL EQUIPMENT CONTROLLED					
			SA		SUPPLY AIR					
			RA		RETURN AIR					
			EA		EXHAUST AIR					
			OA		OUTSIDE AIR					
			MA		MIXED AIR					
			FA		FRESH AIR					
			RF		RELIEF AIR					

GENERAL NOTES:

MECHANICAL INFORMATION IS NOT LIMITED TO THE MECHANICAL DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR INFORMATION ON ALL OTHER CONSTRUCTION DOCUMENTS INCLUDING DRAWINGS BY OTHER DISCIPLINES AND SPECIFICATIONS.

A - EACH DRAWING SHEET AND THE SPECIFICATIONS HAVE BEEN PREPARED TO SUPPLEMENT EACH OTHER AND THEY SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH ITEMS SHOWN AND NOTED ON ONE AND NOT THE OTHER BEING FURNISHED AND INSTALLED AS THOUGH SHOWN AND CALLED OUT IN ALL PLACES. ITEMS IN SPECIFICATIONS OR DRAWINGS LISTED WHICH ARE DIFFERING IN EFFICIENCY OR QUALITY SHALL BE HELD TO THE GREATEST OF: EFFICIENCY, QUALITY OR GOVERNING CODE.

B - THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE INSTALLATION OF THE SYSTEMS ACCORDING TO THE TRUE INTENT AND MEANING OF THE CONTRACT DOCUMENTS.

C - THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT WITH PROPER SERVICE ACCESS AND CLEARANCES ACCORDING TO MANUFACTURERS RECOMMENDATIONS. THE CONTRACTOR SHALL REVIEW SUPPLIERS BID PACKAGES FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS, SCHEDULES, AND DESIGN INTENT (ALL EQUIPMENT AND METHODS). THE CONTRACTOR SHALL REMOVE AND REINSTALL CORRECTLY AT HIS OWN EXPENSE ANY EQUIPMENT NOT IN COMPLIANCE.

D - THE CONTRACTOR SHALL CONSULT MANUFACTURERS INSTALLATION INSTRUCTIONS FOR SIZES, METHODS, ACCESSORIES. AND CLEARANCES IN SPACE AVAILABLE PRIOR TO BIDDING PROJECT

MAKING APPLICATION TO THE ENGINEER IN WRITING. ANY AND ALL ALTERATIONS TO THE SYSTEM SHOWN SHALL BE

E - ANYTHING NOT CLEAR OR IN CONFLICT WILL BE EXPLAINED BY

SUBMITTED TO THE ENGINEER PRIOR TO CHANGES FOR APPROVAL. CONTRACTOR SHALL NOT START ANY CHANGES UNTIL NOTIFIED IN WRITING. IF CHANGES ARE MADE PRIOR TO APPROVAL CONTRACTOR SHALL TAKE ALL RESPONSIBILITY FOR THE CHANGES MADE AND ALL COSTS RELATING TO FAILURE OR REPLACEMENT OF ALTERATIONS.

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATIONS.

THE WORKING DRAWINGS ARE DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND, OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL LOCATIONS FOR MECHANICAL EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL DRAWINGS. THE CONTRACTOR SHALL PROVIDE OR COORDINATE WITH THE GENERAL CONTRACTOR PROVISIONS FOR BLOCKOUTS OR CORE DRILLS THROUGH STRUCTURE.

THE INSTRUCTION TO "PROVIDE" ALSO INCLUDES INSTALLATION.

MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL SMOKE AND FIRE DAMPERS AS REQUIRED BY LOCAL CODES AND AUTHORITIES.

SHEET METAL DUCT SIZES SHOWN ON DRAWINGS ARE FREE AREA DIMENSIONS.

PROVIDE AND INSTALL BALANCING DAMPERS IN ALL SUPPLY AND EXHAUST AIR BRANCH DUCTS. BALANCE TO CFM SHOWN ON PLAN.

SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF DIFFUSERS AND GRILLES.

PROVIDE TURNING VANES IN ALL ELBOWS OF RECTANGULAR DUCT.

THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY IN HANDLING AND DISPOSING OF REFRIGERANTS, OILS, ETC. ALL SUCH MATERIALS SHALL BE HANDLED, DISPOSED, AND USED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS.

THE MECHANICAL CONTRACTOR SHALL VERIFY MOTOR VOLTAGES WITH THE ELECTRICAL DRAWING BEFORE ORDERING MOTORIZED **EQUIPMENT AND CONTROLS.**

C.F.M. LISTED IS ACTUAL AIR.

SUPPLIERS SHALL REVIEW ALL DRAWINGS AND THE SPECIFICATIONS PRIOR TO SUBMITTING PRICES TO THE CONTRACTOR. ALL QUESTIONS AND DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO BIDDING.

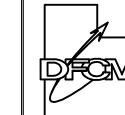
CONTRACTOR SHALL THOROUGHLY REVIEW AND SIGN SUBMITTALS FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS PRIOR TO ENGINEERS REVIEW. SUPPLIERS SHALL HIGHLIGHT OR MARK ALL INFORMATION REQUIRED TO SHOW COMPLIANCE TO THE SPECIFICATIONS. ALL REQUESTED EXCEPTIONS TO THE SPECIFICATIONS, OR SCHEDULES SHALL BE CLEARLY NOTED AND EXPLAINED. SUBMITTAL REVIEW AND ACCEPTANCE IS FOR DESIGN CONCEPT ONLY, AND DOES NOT AT ANY TIME RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO MEET SPECIFICATIONS, CAPACITIES, OR DESIGN INTENT.

ALL MECHANICAL SHALL BE INSTALLED AND CONFORM TO THE 2006 EDITION OF THE IMC WITH UTAH ANNOTATIONS AND LOCAL AUTHORITY REQUIREMENTS.

THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE DRAINING DOWN AND RE-FILLING OF ALL SYSTEMS NECESSARY TO COMPLETE THE WORK OUTLINED BY THIS PROJECT. THIS INCLUDES PROVIDING THE REQUIRED CHEMICAL TREATMENT WHEN RE-FILLING THE SYSTEM.

ALL PIPING, MATERIALS, ETC. SHALL BE NEW AND DOMESTIC MADE UNLE\$S SPECIFICALLY AUTHORIZED IN WRITING PRIOR TO BID.

State of Utah Department of Administrative Services



Division of Facilities Construction & Management 4110 State Office Building Salt Lake City, Utah 84114 Phone: (801) 538 - 3018 Fax: (801) 538 - 3267

Internet: http://www.dfcm.state.ut.us

CONSULTANTS



WHW ENGINEERING INC. PROFESSIONAL MECHANICAL ENGINEERING 8619 Sandy Parkway Suite 101 SANDY, UTAH 84070 (801)466-4021, FAX 466-8536

PROJECT NAME & ADDRESS

OGDEN ARMORY HVAC REPLACEMENT

DFCM No. 07181470

Ogden, Utah

MARK DATE REVISION

PROJECT MANAGER:

DRAWN BY: STAFF CHECKED BY:

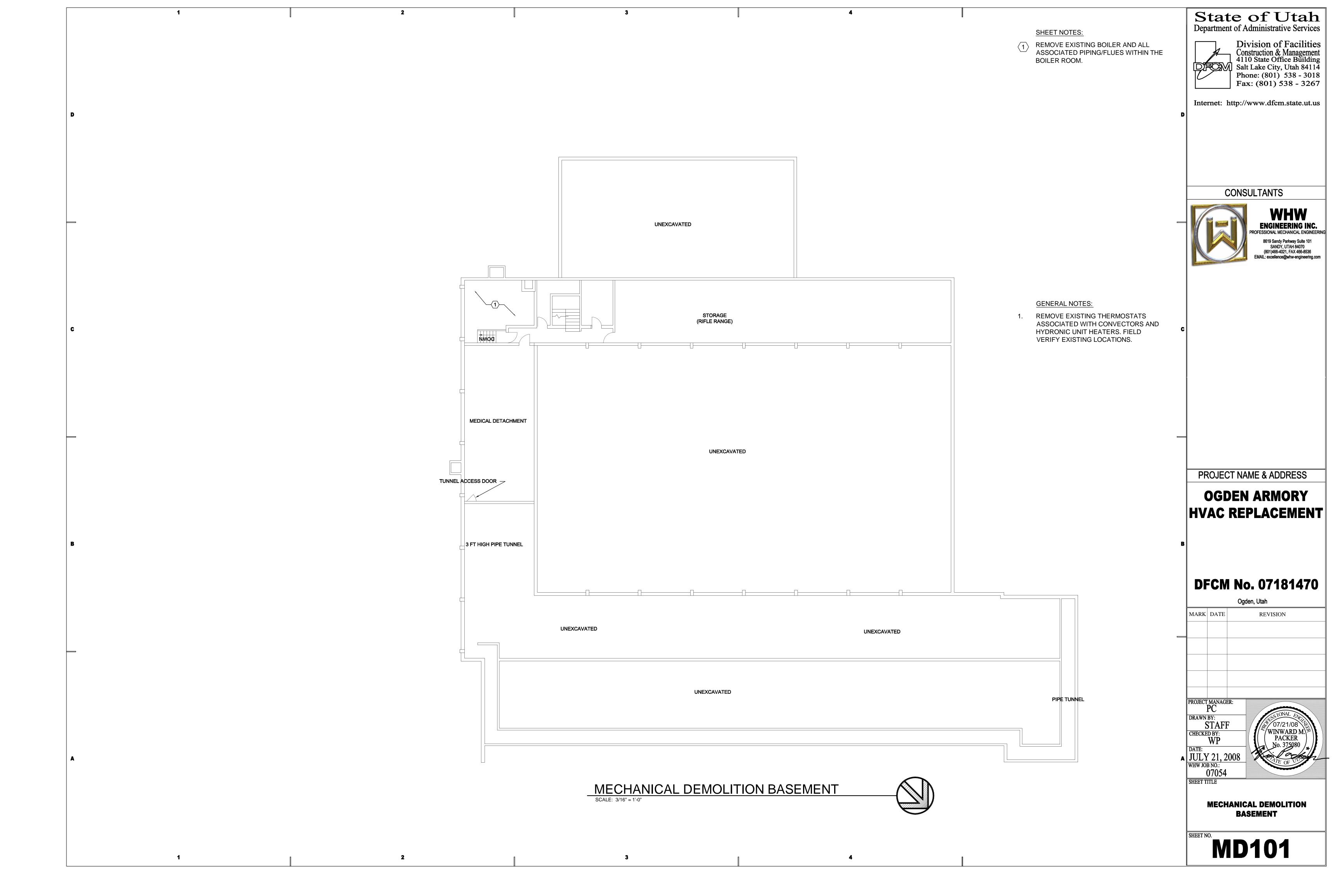
WHW JOB NO.: 07054 SHEET TITLE

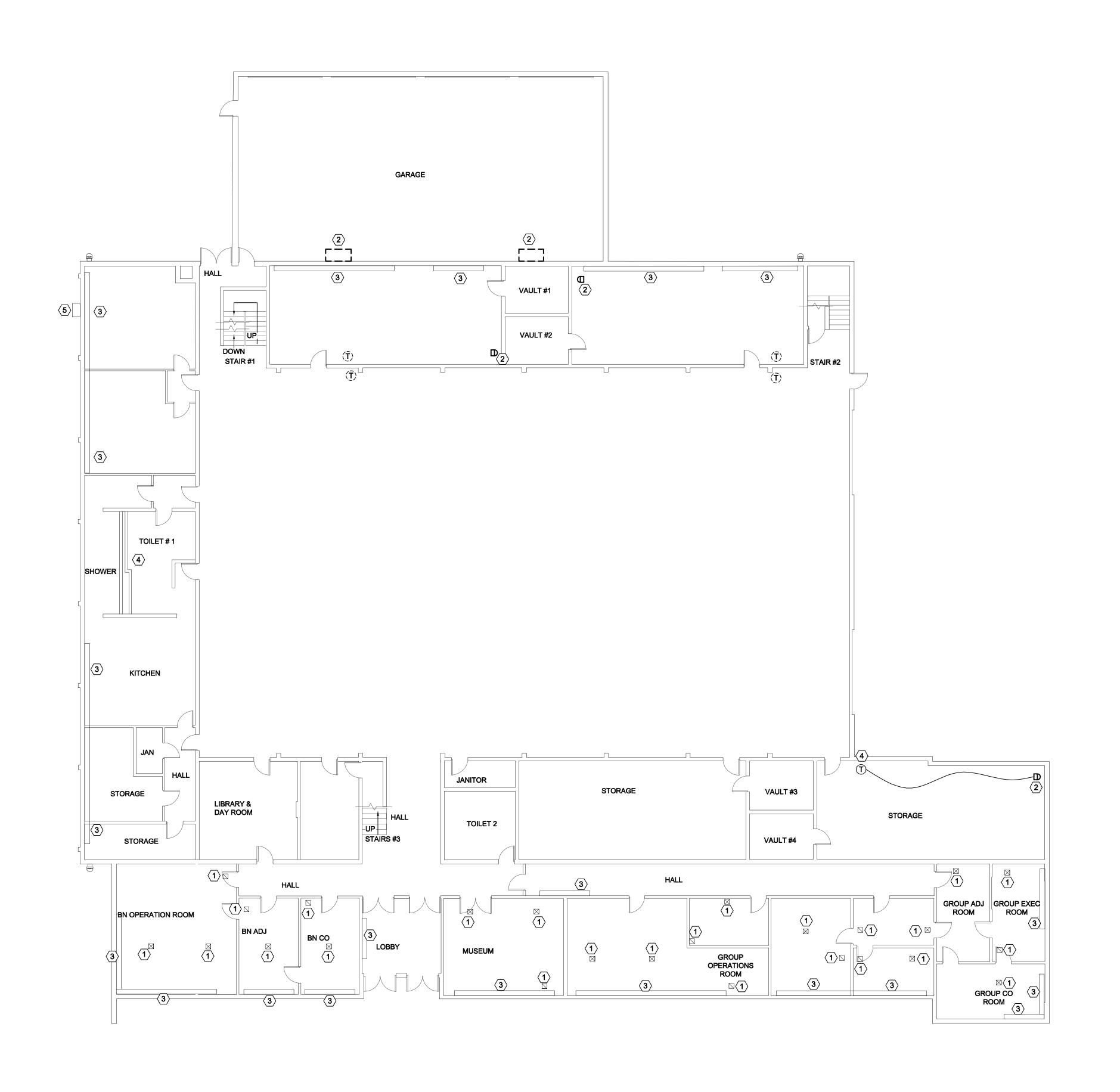
/WINWARD M.\

PACKER

MECHANICAL LEGEND **AND GENERAL NOTES**

M001





SHEET NOTES:

(1) EXISTING DIFFUSERS AND GRILLES TO REMAIN.



(3) EXISTING CONVECTORS AND ASSOCIATED PIPING TO REMAIN IN PLACE.

 $\overline{\langle 4 \rangle}$ EXISTING EXHAUST TO REMAIN.

 $\overline{\left\langle 5\right\rangle }$ EXISTING GAS METER.

State of Utah Department of Administrative Services



Division of Facilities Construction & Management 4110 State Office Building Salt Lake City, Utah 84114 Phone: (801) 538 - 3018 Fax: (801) 538 - 3267

Internet: http://www.dfcm.state.ut.us

CONSULTANTS



WHW ENGINEERING INC. PROFESSIONAL MECHANICAL ENGINEERING 8619 Sandy Parkway Suite 101 SANDY, UTAH 84070 (801)466-4021, FAX 466-8536 EMAIL: excellence@whw-engineering.com

GENERAL NOTES:

1. REMOVE EXISTING THERMOSTATS ASSOCIATED WITH CONVECTORS AND HYDRONIC UNIT HEATERS. FIELD VERIFY EXISTING LOCATIONS.

PROJECT NAME & ADDRESS

OGDEN ARMORY HVAC REPLACEMENT

DFCM No. 07181470

Ogden, Utah

MARK DATE REVISION

PROJECT MANAGER:

DRAWN BY:

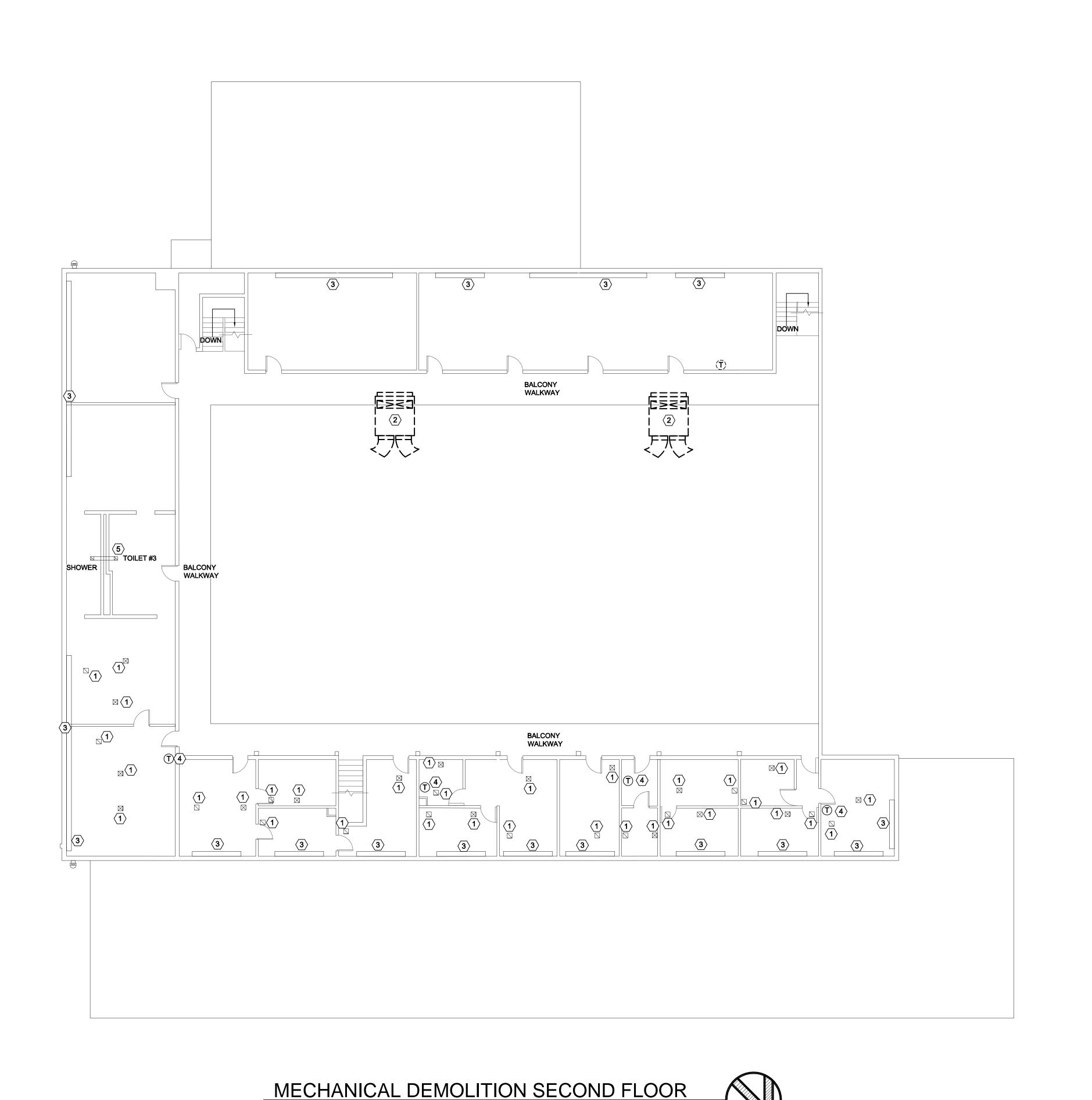
STAFF CHECKED BY: WP

DATE:
JULY 21, 2008
WHW JOB NO.:
07054

MECHANICAL DEMOLITION FIRST FLOOR

MD102

MECHANICAL DEMOLITION FIRST FLOOR SCALE: 3/16" = 1'-0"

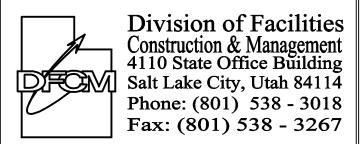


SCALE: 3/16" = 1'-0"

SHEET NOTES:

- EXISTING DIFFUSERS AND GRILLES TO REMAIN.
- 2 DEMO EXISTING MAKE-UP AIR UNIT.
- (3) EXISTING CONVECTORS TO REMAIN IN PLACE.
- $\overline{\langle 4 \rangle}$ EXISTING THERMOSTAT TO REMAIN.
- $\langle 5 \rangle$ EXISTING EXHAUST TO REMAIN.

State of Utah Department of Administrative Services



Internet: http://www.dfcm.state.ut.us

CONSULTANTS



WHW ENGINEERING INC. PROFESSIONAL MECHANICAL ENGINEERING 8619 Sandy Parkway Suite 101 SANDY, UTAH 84070 (801)466-4021, FAX 466-8536 EMAIL: excellence@whw-engineering.com

GENERAL NOTES:

1. REMOVE EXISTING THERMOSTATS ASSOCIATED WITH CONVECTORS AND HYDRONIC UNIT HEATERS. FIELD VERIFY EXISTING LOCATIONS.

PROJECT NAME & ADDRESS

OGDEN ARMORY HVAC REPLACEMENT

DFCM No. 07181470

Ogden, Utah

MARK	DATE	REVISION

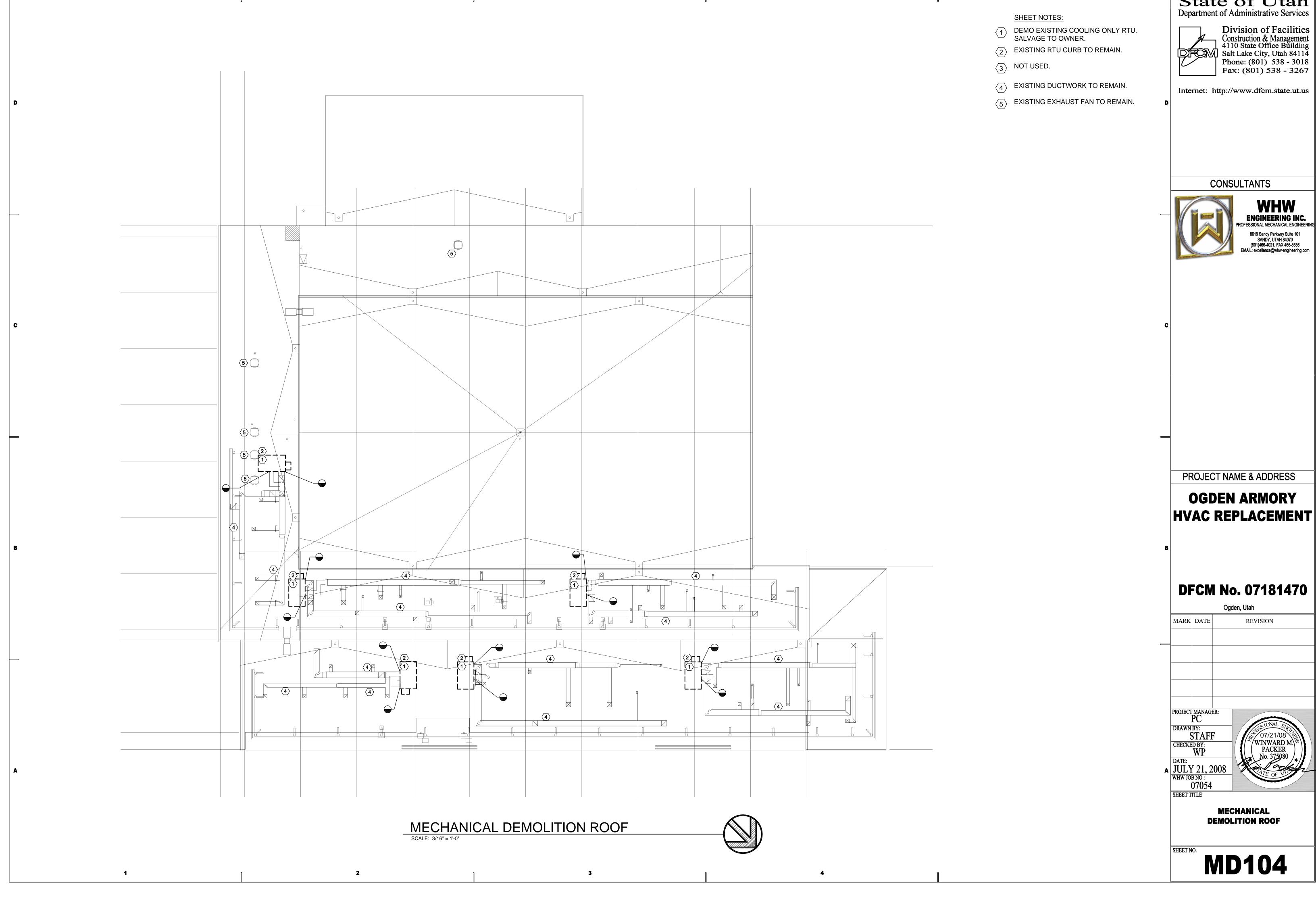
PROJECT MANAGER: DRAWN BY:

STAFF CHECKED BY: WP

DATE:
JULY 21, 2008
WHW JOB NO.:
07054

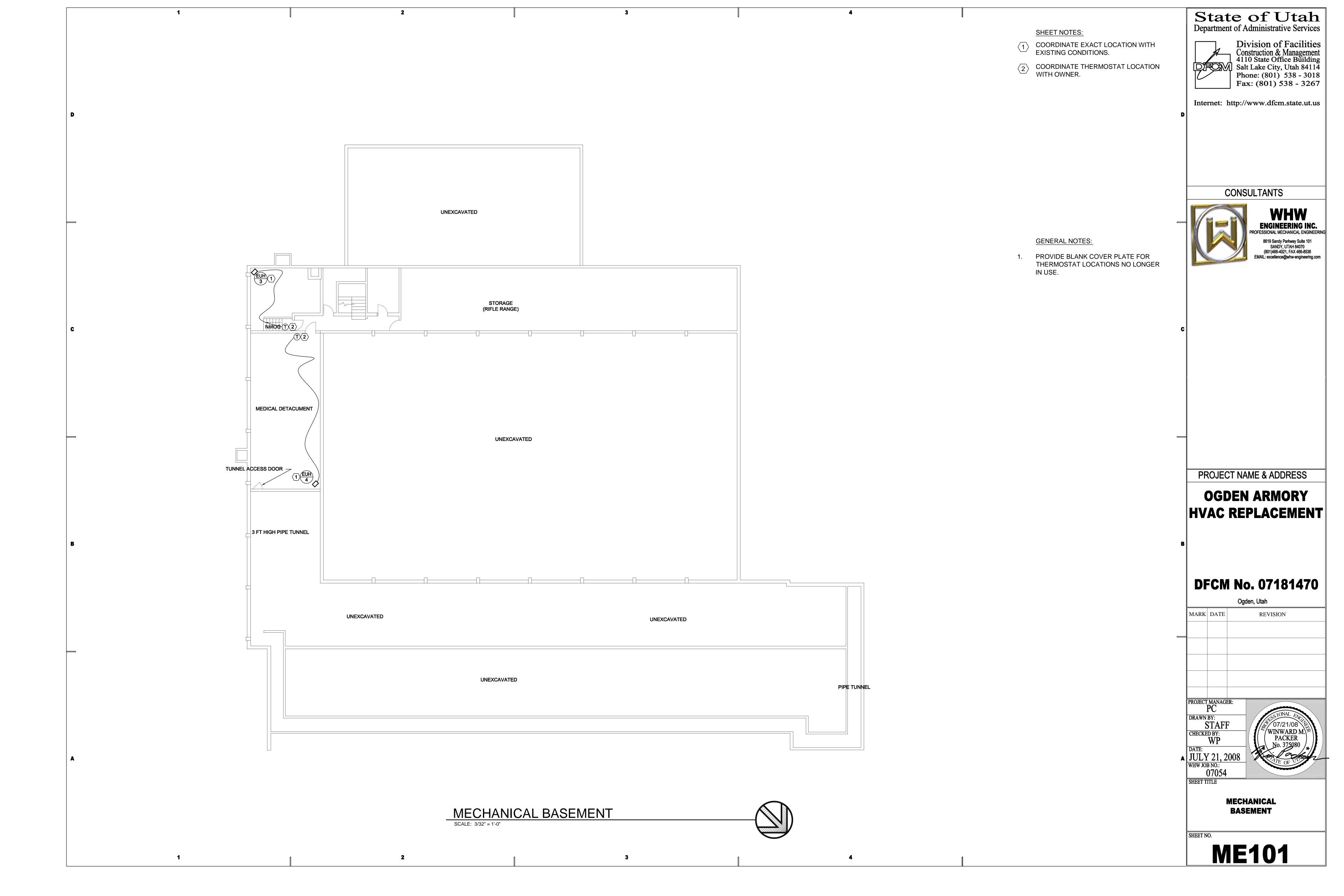
MECHANICAL DEMOLITION SECOND FLOOR

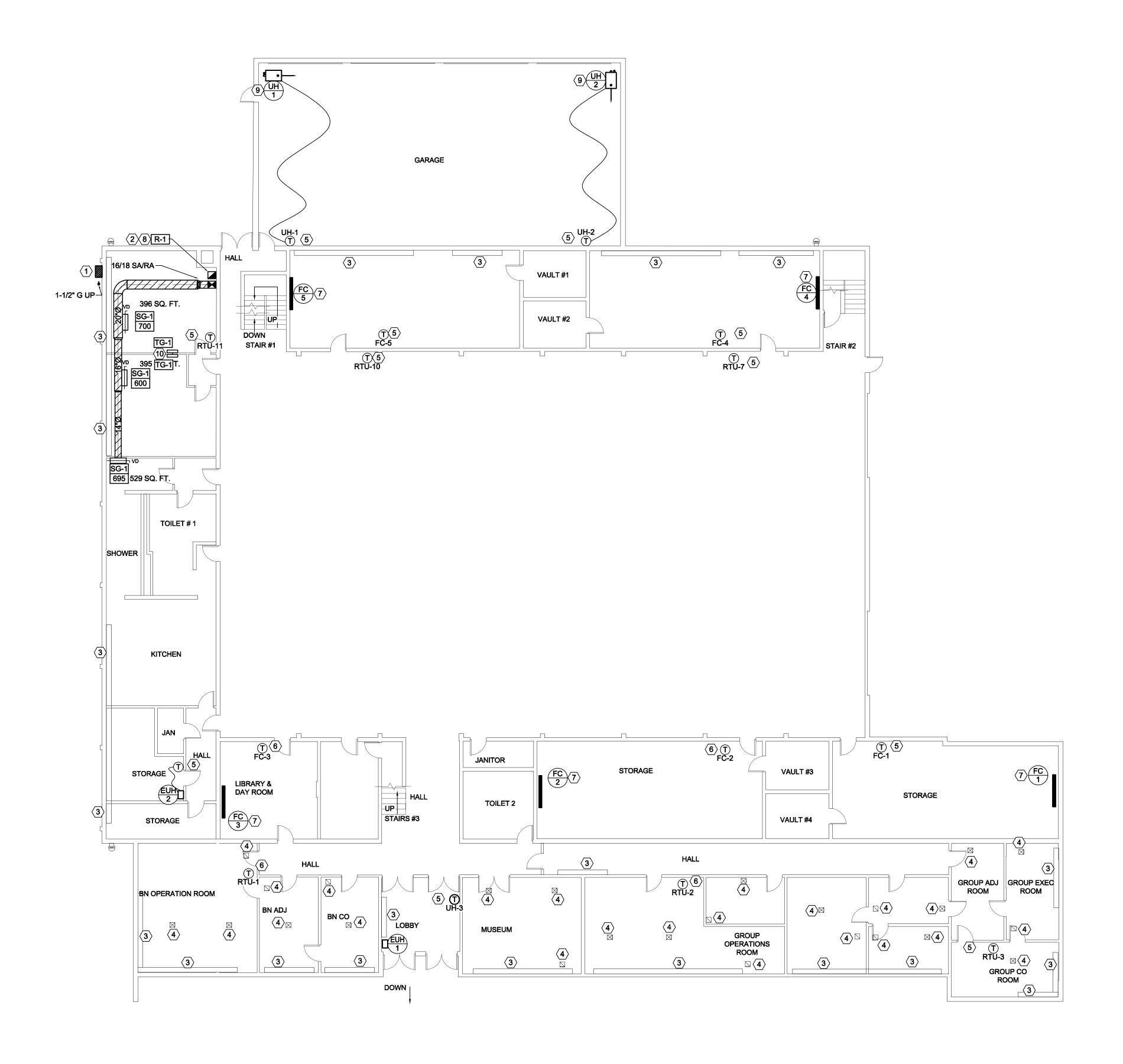
MD103



State of Utah
Department of Administrative Services

ENGINEERING INC.
PROFESSIONAL MECHANICAL ENGINEERING





MECHANICAL FIRST FLOOR

SCALE: 3/16" = 1'-0"

SHEET NOTES:

OWNER.

- GAS METER
 TOTAL LOAD: 2500 CFH
 LONGEST LENGTH: 275'
 DESIGN PRESSURE: 2 LBS
 SIZED BASED ON BRANCH METHOD
- $\langle 2 \rangle$ SEE ME103 FOR CONTINUATION.
- (3) EXISTING CONVECTORS TO REMAIN IN PLACE.
- EXISTING DIFFUSER/REGISTER TO REMAIN.
- PROVIDE NEW PACKAGED T-STAT.
 COORDINATE EXACT LOCATION WITH
- $\langle 6 \rangle$ EXISTING THERMOSTAT TO REMAIN.
- (7) COORDINATE EXACT LOCATION OF FAN COIL WITH USER.
- (8) TRANSITION TO RETURN GRILLE.
- PROVIDE 4"Ø 'B' VENT THROUGH ROOF.
 SEE DETAIL. CONFIRM SIZE PER
 MANUFACTURERS
 RECOMMENDATIONS.
- COORDINATE WITH USER FOR EXACT TRANSFER GRILLE LOCATION.

GENERAL NOTES:

- 1. EXPOSED DUCT WORK TO BE SPIRAL.
- PROVIDE BLANK COVER PLATE FOR THERMOSTAT LOCATIONS NO LONGER IN USE.

State of Utah Department of Administrative Services



Internet: http://www.dfcm.state.ut.us

CONSULTANTS



PROJECT NAME & ADDRESS

OGDEN ARMORY HVAC REPLACEMENT

DFCM No. 07181470

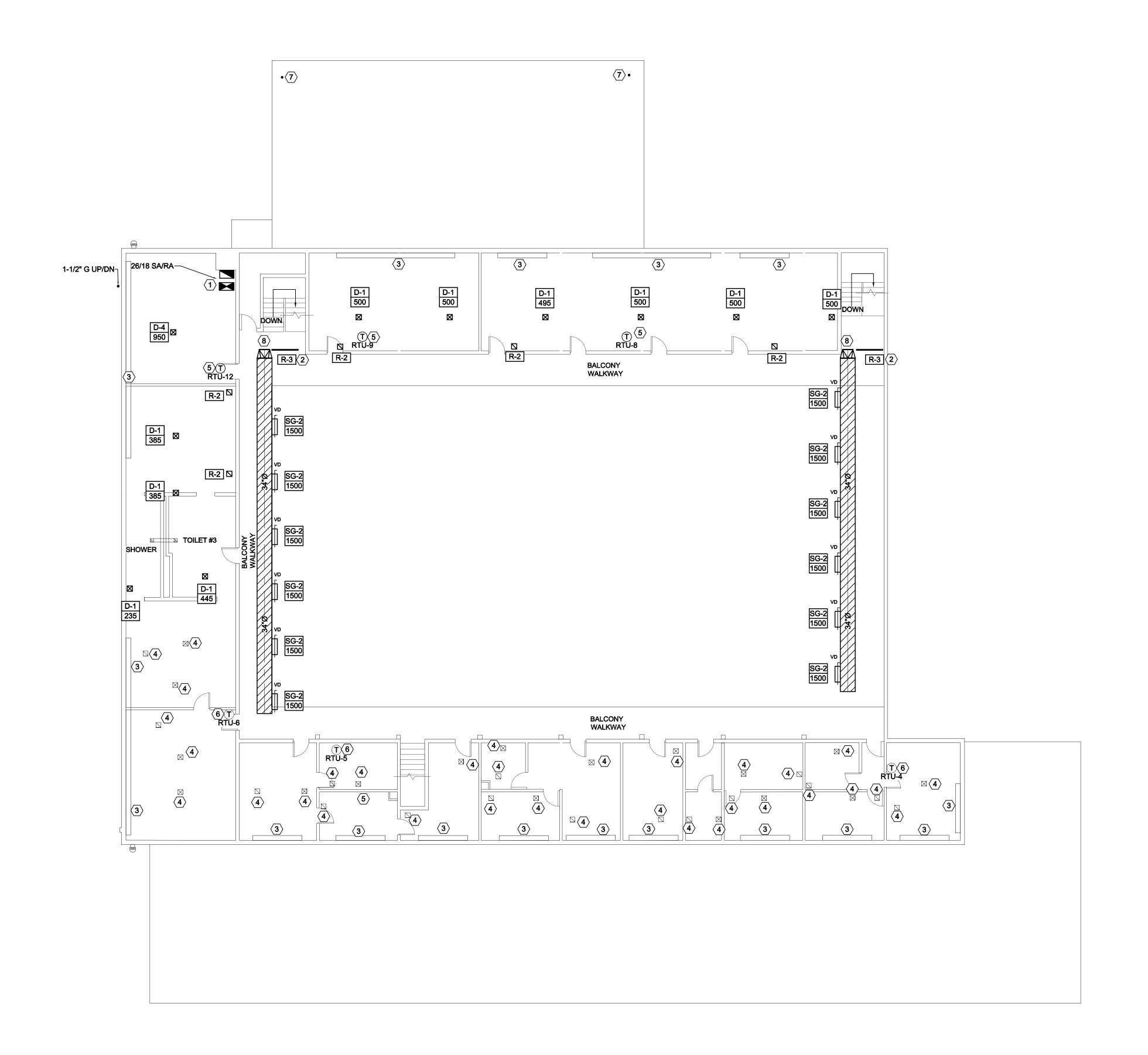
MARK DATE REVISION

PROJECT MANAGER:
PC
DRAWN BY:
STAFF
CHECKED BY:
WP
DATE:
JULY 21, 2008

WP
DATE:
JULY 21, 2008
WHW JOB NO.:
07054
SHEET TITLE

MECHANICAL FIRST FLOOR

GUEETNO



MECHANICAL SECOND FLOOR

SCALE: 3/16" = 1'-0"

SHEET NOTES:

- (1) NEW MECHANICAL CHASE.
- PROVIDE NEW RETURN GRILLE IN THIS APPROXIMATE LOCATION. FIELD VERIFY EXISTING CONDITIONS.
- EXISTING CONVECTORS TO REMAIN IN PLACE.
- (4) EXISTING DIFFUSER/GRILLE REMAIN.
- 5 PROVIDE NEW PACKAGED THERMOSTAT. COORDINATE EXACT LOCATION WITH USER.
- $\langle 6 \rangle$ EXISTING THERMOSTAT TO REMAIN.
- PROVIDE VENT CAP FOR GAS UNIT HEATER BELOW. SEE DETAIL.
- $\langle 8 \rangle$ SEE ME104 FOR CONTINUATION.

State of Utah Department of Administrative Services



Division of Facilities Construction & Management 4110 State Office Building Salt Lake City, Utah 84114 Phone: (801) 538 - 3018 Fax: (801) 538 - 3267

Internet: http://www.dfcm.state.ut.us

CONSULTANTS



GENERAL NOTES:

- EXPOSED DUCT WORK TO BE SPIRAL.
- PROVIDE BLANK COVER PLATE FOR THERMOSTAT LOCATIONS NO LONGER IN USE.

PROJECT NAME & ADDRESS

OGDEN ARMORY HVAC REPLACEMENT

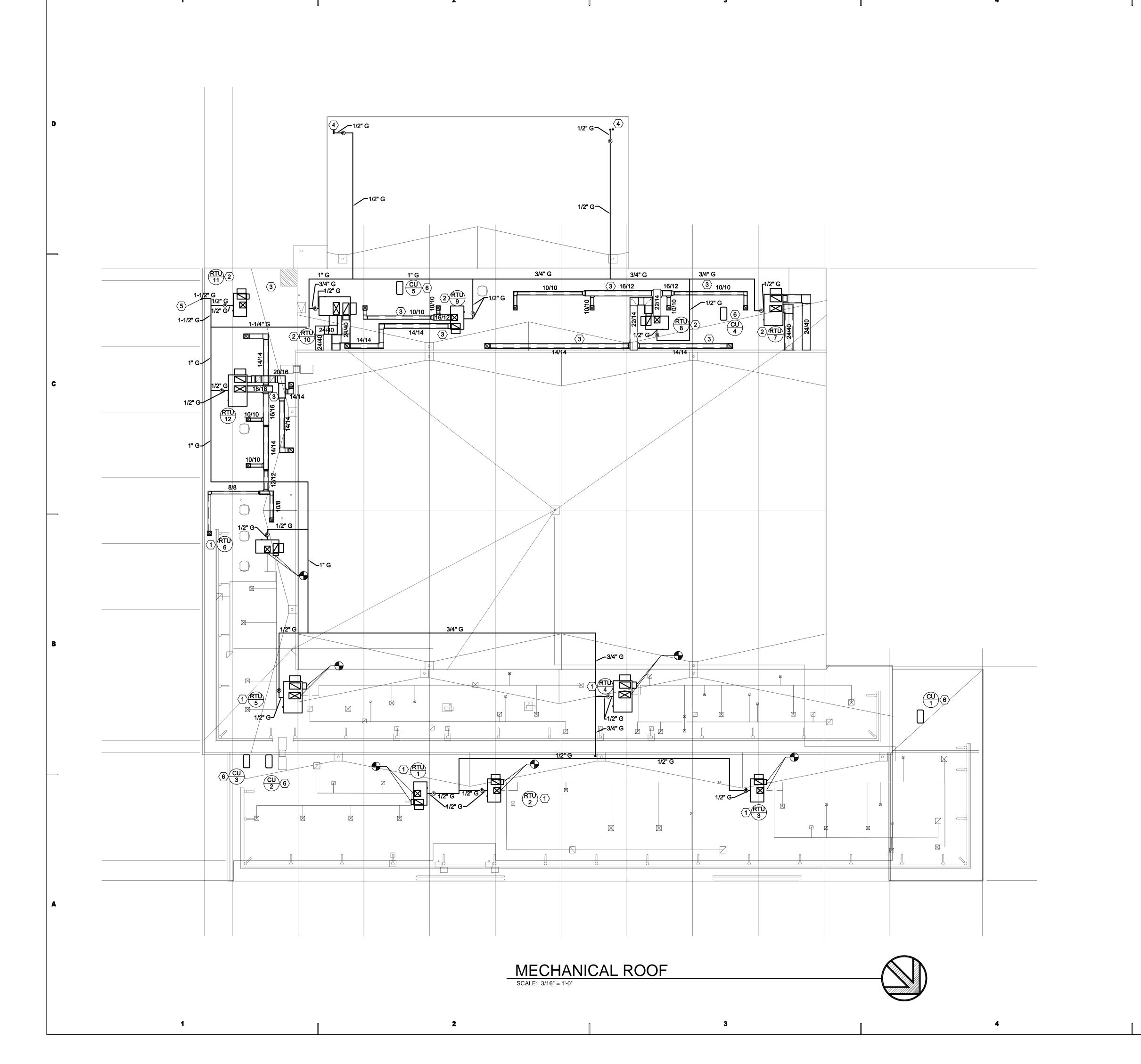
DFCM No. 07181470

Ogden, Utah MARK DATE REVISION PROJECT MANAGER: DRAWN BY:

STAFF

DATE:
JULY 21, 2008
WHW JOB NO.:
07054

MECHANICAL SECOND FLOOR



SHEET NOTES:

- PROVIDE NEW HEATING/COOLING RTU ON EXISTING ROOF CURB.
- PROVIDE NEW RTU ON NEW ROOF
- \bigcirc DUCTWORK ON ROOF.
- PROVIDE VENT CAP FOR GAS UNIT HEATER. SEE DETAIL.
- 5 1-1/2" G DN TO GAS METER. SEE DETAIL. SEE ME102 FOR CONTINUATION.
- 6 COORDINATE EXACT LOCATION OF CONDENSING UNIT WITH EXISTING CONDITIONS.

State of Utah Department of Administrative Services



Division of Facilities Construction & Management 4110 State Office Building Salt Lake City, Utah 84114
Phone: (801) 538 - 3018
Fax: (801) 538 - 3267

Internet: http://www.dfcm.state.ut.us

CONSULTANTS



WHW ENGINEERING INC. PROFESSIONAL MECHANICAL ENGINEERING 8619 Sandy Parkway Suite 101 SANDY, UTAH 84070 (801)466-4021, FAX 466-8536 EMAIL: excellence@whw-engineering.com

PROJECT NAME & ADDRESS

OGDEN ARMORY HVAC REPLACEMENT

DFCM No. 07181470

Ogden, Utah REVISION

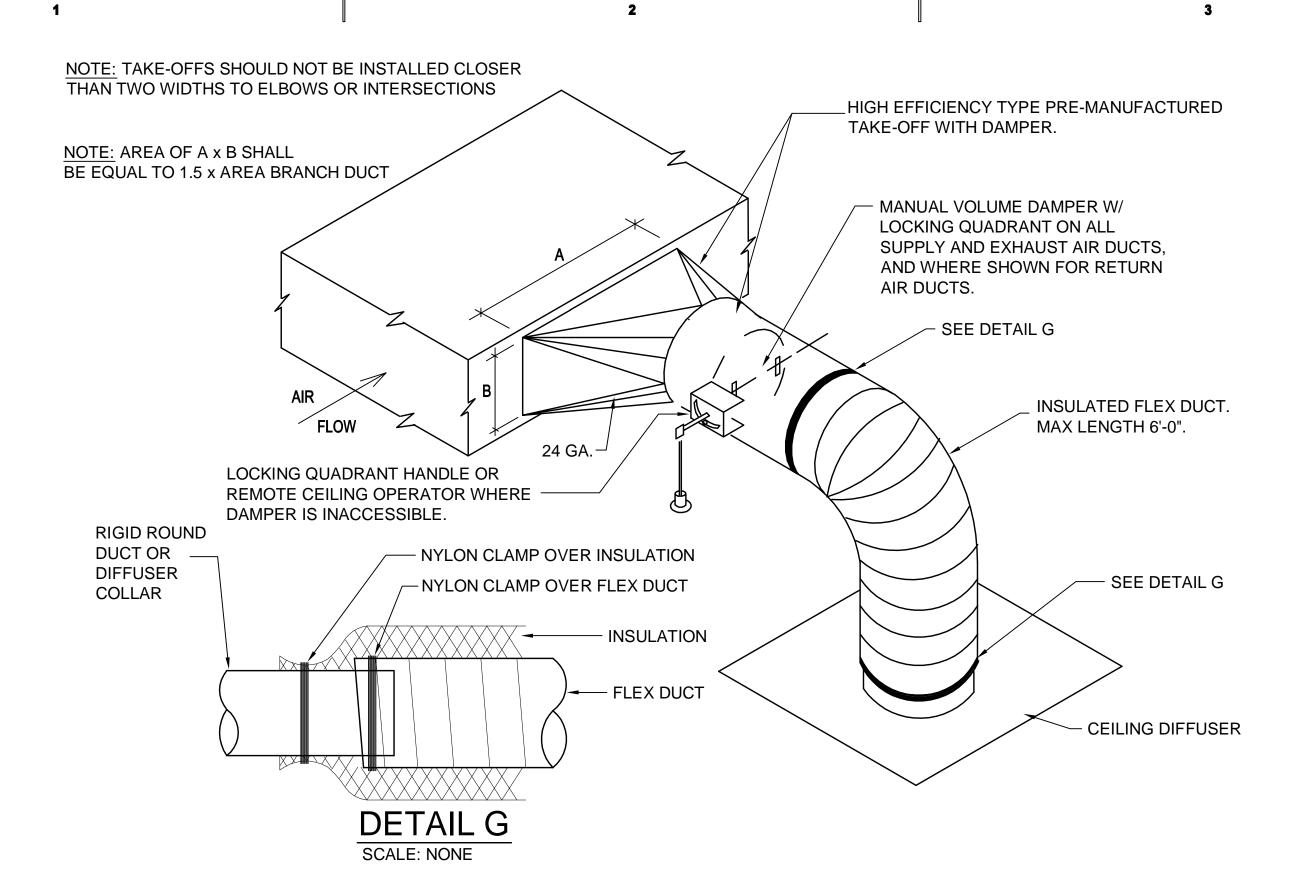
MARK DATE

PROJECT MANAGER: PC DRAWN BY:

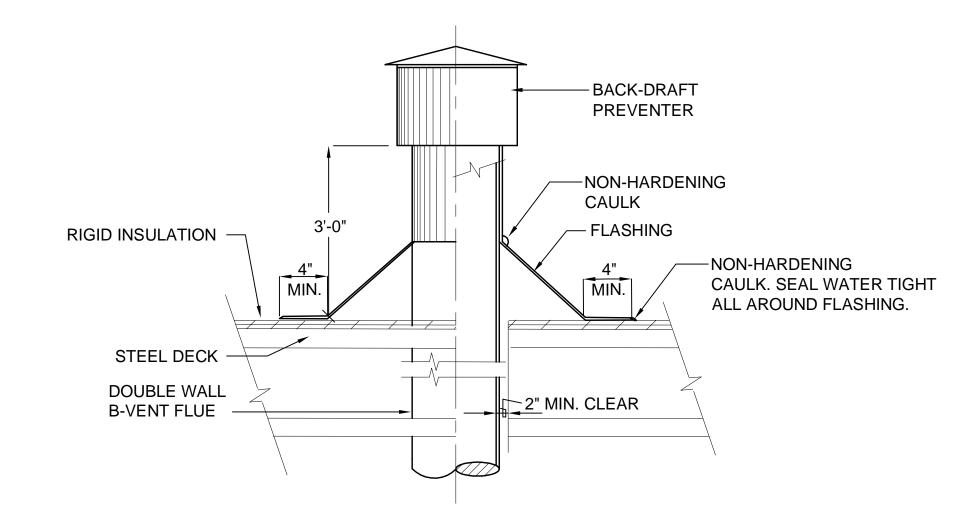
STAFF

DATE:
JULY 21, 2008
WHW JOB NO.:
07054

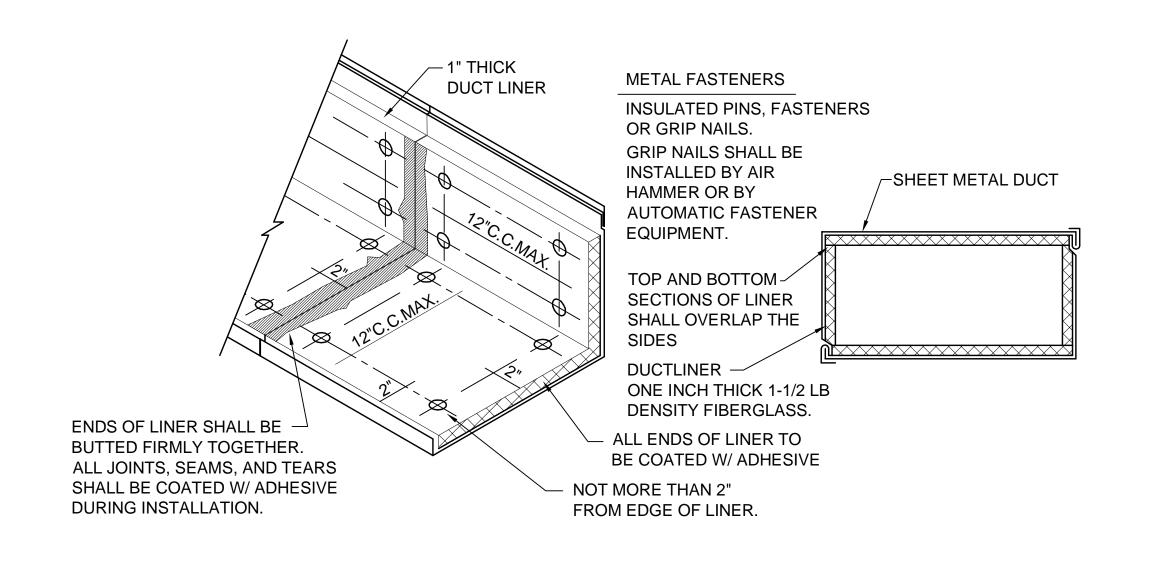
MECHANICAL ROOF



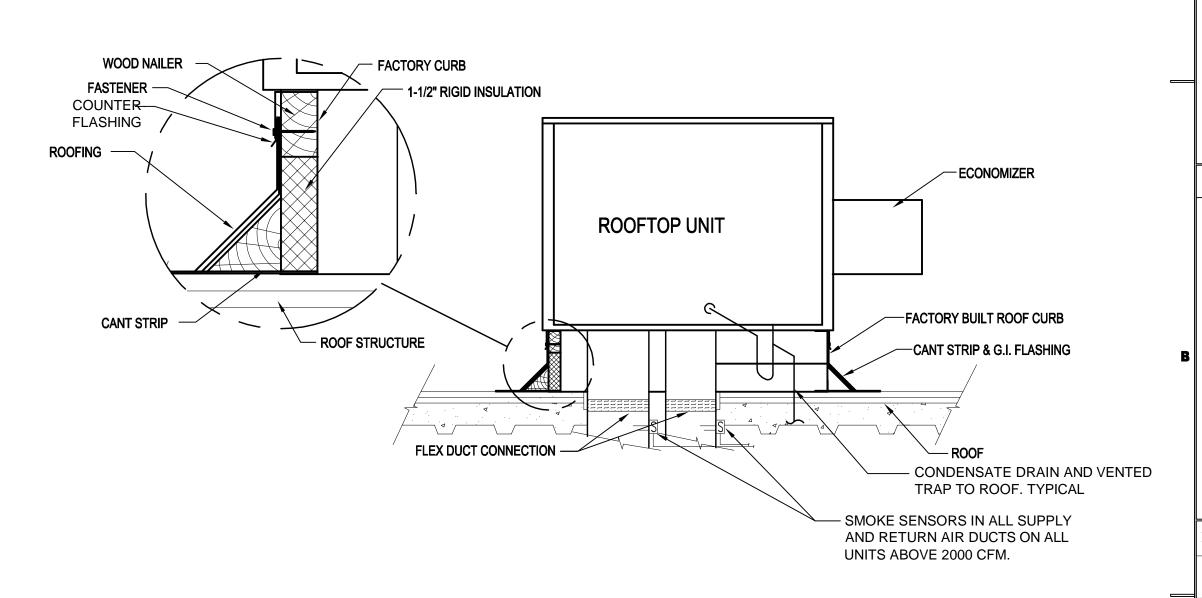
SQUARE-TO-ROUND TAKE-OFF DETAIL SCALE: NONE







DUCT LINER DETAIL





State of Utah Department of Administrative Services

> Division of Facilities Construction & Management 4110 State Office Building Salt Lake City, Utah 84114 Phone: (801) 538 - 3018 Fax: (801) 538 - 3267

Internet: http://www.dfcm.state.ut.us

CONSULTANTS



WHW ENGINEERING INC. PROFESSIONAL MECHANICAL ENGINEERING 8619 Sandy Parkway Suite 101 SANDY, UTAH 84070 (801)466-4021, FAX 466-8536

PROJECT NAME & ADDRESS

OGDEN ARMORY HVAC REPLACEMENT

DFCM No. 07181470

Ogden, Utah

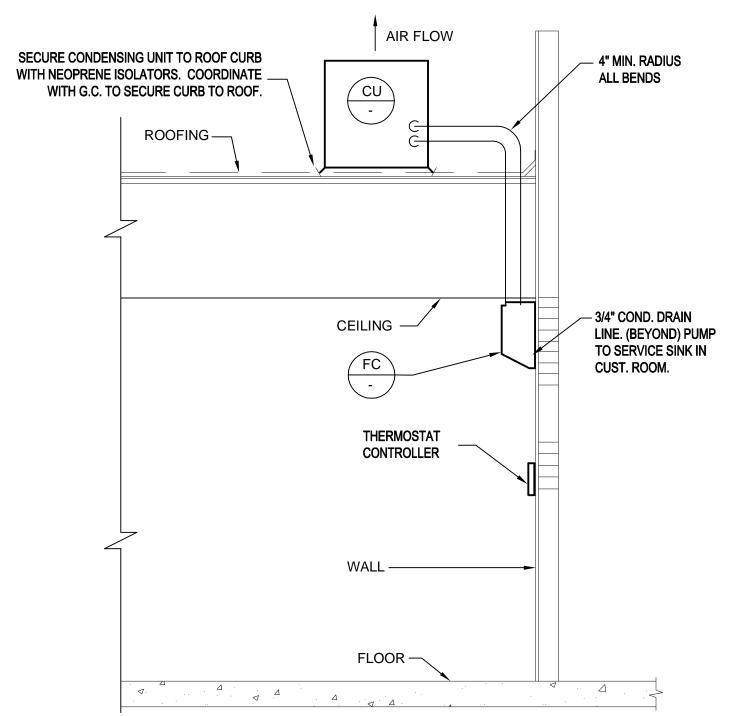
MARK DATE **REVISION**

PROJECT MANAGER: PC DRAWN BY: **STAFF** CHECKED BY: WP

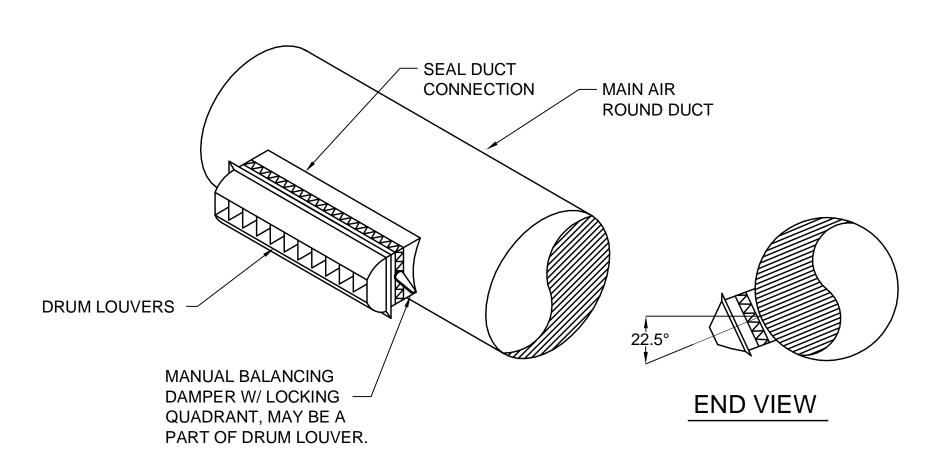
A JULY 21, 2008 WHW JOB NO.: 07054

MECHANICAL DETAILS

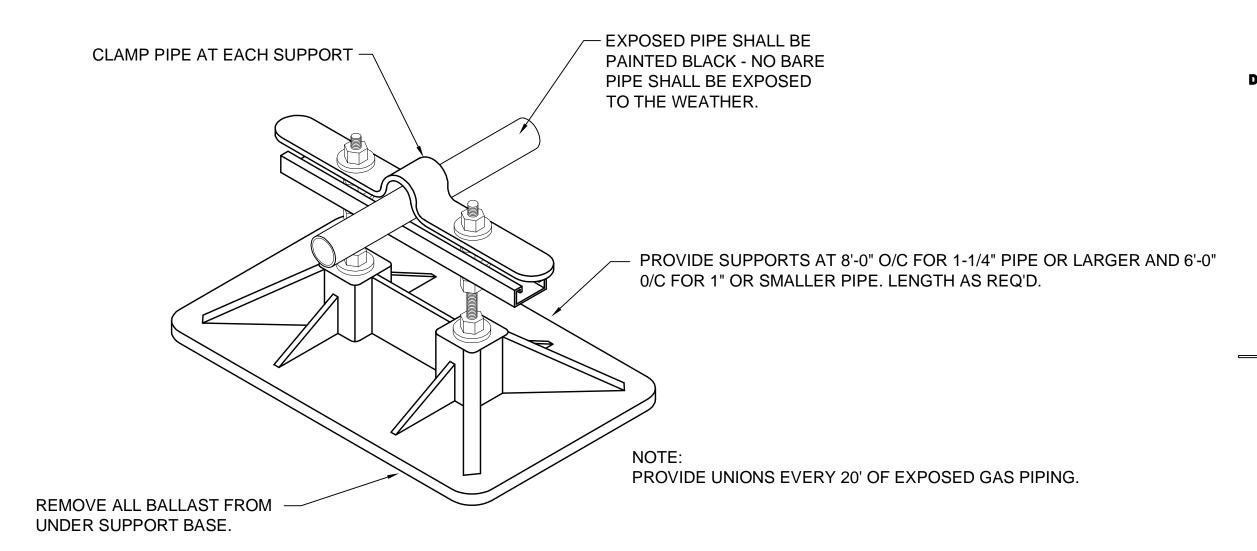
NOTE:
DRY-CHARGED LINE SETS ARE AVAILABLE IN LENGTHS OF 16, 22, 32, & 49 FEET. LENGTHS ARE TO BE KEPT AS SHORT AS POSSIBLE. COILING OF LINES THAT ARE TOO LONG WILL NOT BE ACCEPTABLE AND WILL BE REPLACED AT THE CONTRACTORS EXPENSE. OPTIONAL: HARD REFRIGERANT PIPING. ALL CONNECTIONS ARE TO BE FLARED. CONTRACTOR MAY ALSO USE HARD PIPE AND FITTINGS. SEE SPECIFICATIONS FOR PIPE AND INSULATION.



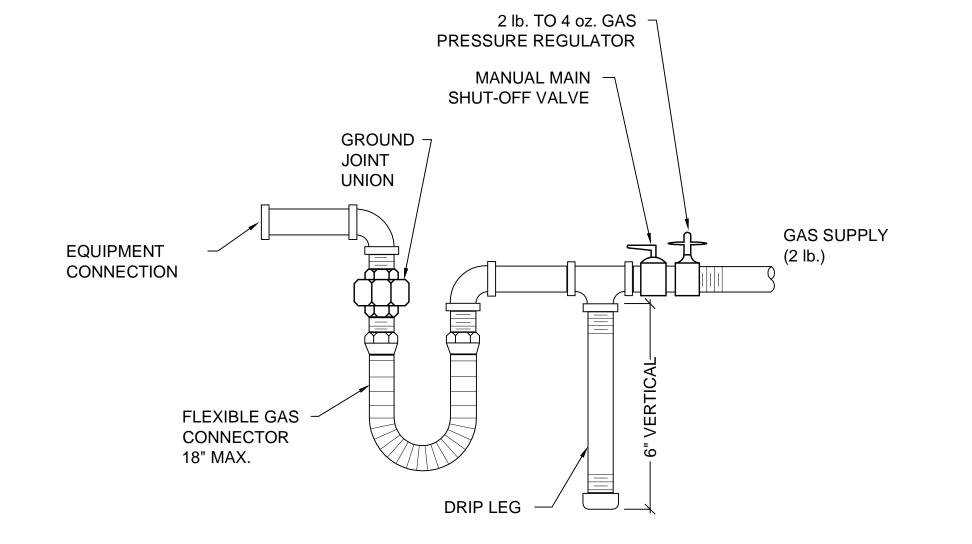
WALL MOUNT AC UNIT DETAIL



DRUM LOUVER DETAIL



GAS SUPPORT ON ROOF DETAIL SCALE: NONE



GAS LINE CONNECTION DETAIL SCALE: NONE

State of Utah Department of Administrative Services

Division of Facilities Construction & Management 4110 State Office Building Salt Lake City, Utah 84114 Phone: (801) 538 - 3018 Fax: (801) 538 - 3267

Internet: http://www.dfcm.state.ut.us

CONSULTANTS



WHW ENGINEERING INC. PROFESSIONAL MECHANICAL ENGINEERING 8619 Sandy Parkway Suite 101 SANDY, UTAH 84070 (801)466-4021, FAX 466-8536 EMAIL: excellence@whw-engineering.com

PROJECT NAME & ADDRESS

OGDEN ARMORY HVAC REPLACEMENT

DFCM No. 07181470

Ogden, Utah

MARK DATE REVISION

PROJECT MANAGER: PC DRAWN BY: STAFF CHECKED BY: WP

DATE:
JULY 21, 2008
WHW JOB NO.:
07054

MECHANICAL DETAILS

	DIFFUSER SCHEDULE												
SYMBOL	TYPE	MAX CFM	FACE SIZE	NECK SIZE	CEILING TYPE	BLOW	PATTERN	SCHEDULE NOTES					
D-1 CFM			12/12	12/12	HARD	4WAY		1,2,3,4,5					
D-2 CFM	CEILING	750	15/15	15/15	HARD	4WAY		1,2,3,4,5					
D-3 CFM	CEILING	300	9/9	9/9	HARD	4WAY	■	1,2,3,4,5					
D-4 CFM	CEILING	1000	18/18	18/18	HARD	4WAY		1,2,3,4,5					
SG-1 CFM	DUCT MOUNTED	700	18/10	18/10	N/A	1WAY		1,2,3,4,5					
SG-2 CFM	DUCT MOUNTED	1000	12/24	12/24	N/A	1WAY		1,2,3,5,6					

- 1. PROVIDE LAY-IN CEILING AND BORDER / MODULE AS REQUIRED. SEE ARCHITECTURAL CEILING PLANS.
- 2. MAXIMUM NC 25 AT CFM LISTED.
- 3. PROVIDE TRANSITION TO DIFFUSER NECK SIZE AS REQUIRED TO DUCT WORK SHOWN ON PLAN.
- 4. DIFFUSER SHALL BE PRICE MODEL SMD OR EQUAL BY APPROVED MANUFACTURER IN SPECIFICATIONS. MATCH EXISTING.
- 5. FINISH SHALL BE STANDARD WHITE.
- 6. SHALL BE PRICE HCD OR EQUAL BY APPROVED MANUFACTURE IN SPECIFICATIONS.

REGISTER, LOUVER & GRILLE SCHEDULE

SYMBOL	TYPE	SERVICE	MAX CFM	NOMINAL SIZE	THROAT SIZE	CEILING TYPE	SCHEDULE NOTES
R-1	DUCT MOUNTED	RETURN	1200	22/22	22/22	N/A	1,2,3,4
R-2	CEILING	RETURN	1200	1200 22/22 22/22		HARD	1,2,3,4
R-3	SIDEWALL	RETURN	9000	60/36	60/36	N/A	1,3,4,6
TG-1	SIDEWALL	TRANSFER	700	16/16	16/16	N/A	1,2,3,4

REGISTER. LOUVER AND DIFFUSER SCHEDULE NOTES:

- 1. MAXIMUM NC = 25 @ MAXIMUM CFM NOTED.
- 2. SHALL BE PRICE 535 OR EQUAL BY OTHER APPROVED MANUFACTURERS.
- 3. SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS.
- 4. FINISH SHALL BE STANDARD WHITE.
- 5. FINISH TO BE SPECIFIED BY ARCH
- 6, SHALL BE PRICE 90 OR EQUAL BY OTHER APPROVED MANUFACTURERS.

ROOFTOP AIR CONDITIONER SCHEDULE (GAS HEAT)

															,	
	MANUFACTURER &			E.S.P. IN	HEATING		COOLING			E	LECTRICAL			EER/	OPER.	SCHEDULE
SYMBOL	MODEL NUMBER	SA CFM	OSA CFM	W.G.	TOT. MIN. INPUT MBH	AMB. AIR (DB)	AMB. AIR (WB)	MIN. TOTAL MBH	V - Ø - Hz	COMPRESSOR #	COMPRESSOR TOTAL RLA	MCA	МОР	SEER	WT. (LBS)	NOTES
RTU 1	TRANE YHC048	1385	275	.75	99.8	95	67	48.5	208/3/60	1	14.6	28.3	40	15	950	
RTU 2	TRANE YHC048	1615	325	.75	99.8	95	67	50.0	208/3/60	1	14.6	28.3	40	15	950	
RTU 3	TRANE YHC048	1890	380	.75	99.8	95	67	51.4	208/3/60	1	14.6	28.3	40	15	950	
RTU 4	TRANE YHC060	2325	465	.75	108.2	95	67	52.0	208/3/60	1	17.6	32.1	45	15	1000	
RTU 5	TRANCE YHC072	2520	505	.75	124.8	95	67	75.6	208/3/60	1	22.4	36.5	50	11.2	1300	
RTU 6	TRANE YHC048	1580	315	.75	99.8	95	67	49.8	208/3/60	1	14.6	28.3	40	15	950	
RTU 7	TRANE YFD240	9000	1800	.75	332.8	95	67	261	208/3/60	2	48/25	113	150	10.2	2800	
RTU 8	TRANE YHC060	1995	400	.75	108.2	95	67	63.5	208/3/60	1	17.6	32.1	45	15	1000	
RTU 9	TRANE YHC036	1000	200	.75	99.8	95	67	37.1	208/3/60	1	11.5	21.9	30	15	800	
RTU 10	TRANE YFD240	9000	1800	.75	332.8	95	67	261	208/3/60	2	48/25	113	150	10.2	2800	
RTU 11	TRANE YHC060	1995	400	.75	108.2	95	67	63.5	208/3/60	1	17.6	32.1	45	15	1000	
RTU 12	TRANE YSC072	2400	480	.75	124.8	95	67	75.0	208/3/60	1	22.4	36.5	50	11.2	1400	
4 <u> </u>	DOEC NOT INCLUDE LA	OCCEC TUD		CCCODICC	<u> </u>										<u> </u>	

- 1. E.S. P. DOES NOT INCLUDE LOSSES THROUGH ACCESSORIES.
- 2. RATED MINIMUM INPUT AT SEA LEVEL.
- 3. PROVIDE ONE 15 AMP, 120 VOLT, DUPLEX GFCI SERVICE OUTLET. FACTORY INSTALLED, FIELD WIRED.
- 4. BELT DRIVE UNIT
- 5. 2 STAGE HEATING
- 6. REFRIGERANT 410A

State of Utah
Department of Administrative Services



Internet: http://www.dfcm.state.ut.us

CONSULTANTS



PROJECT NAME & ADDRESS

OGDEN ARMORY HVAC REPLACEMENT

DFCM No. 07181470

Ogden, Utah

MARK	DATE	REVISION

PROJECT MANAGER: PC

DRAWN BY: STAFF

MECHANICAL SCHEDULES

SHEET NO. ME601

SPLIT SYSTEM SCHEDULE - OUTDOOR UNIT

ITEM NO.	MANUFACTURER	AREA & ROOMS	CAPACIT	Y BTU/HR	SEER	EL	ECTRIC	CAL	OPER WT.	COMMENTS
TI LIVI NO.	AND MODEL NO.	SERVED	HEATING	COOLING	JLLN	МОСР	MCA	V-Ø-Hz	LBS.	OGIVIIVIETTO
CU 1	MITSUBISHI MUZ-A24NA	STORAGE	23,200	22,200	16	20	17	208/1/60	128	
CU 2	MITSUBISHI MUZ-A24NA	STORAGE	23,200	22,200	16	20	17	208/1/60	128	
CU 3	MITSUBISHI MUZ-A12NA	LIBRARY	13,600	12,000	17	15	12	208/1/60	82	
CU 4	MITSUBISHI MUZ-A24NA	STORAGE	23,200	22,200	16	20	17	208/1/60	128	
CU 5	MITSUBISHI MUZ-A24NA	STORAGE	23,200	22,200	16	20	17	208/1/60	128	
1. REFRIG	1. REFRIGERANT 410-A									

	GAS FIRED UNIT HEATER SCHEDULE											
	MANUFACTURER &	AREA		INPUT	OUTPUT		MOTOR			OPER		
SYMBOL	MODEL NUMBER	SERVED	C.F.M.	MBH	MBH SEA LEVEL	V - Ø - Hz	HP	TOTAL AMPS	FLUE	WT. LBS.	COMMENTS	
UH 1	REZNOR UDAP-75	GARAGE	960	75	62	115/1/60	.06	3.3	4"	75	1	
UH 2	REZNOR UDAP-75	GARAGE	960	75	62	115/1/60	.06	3.3	4"	75	1	
NOTE: PROVIDE	NOTE: PROVIDE WITH HANGER RODS C/W VIBRATION ISOLATORS SEISMICALLY BRACE UNITS.											

SPLIT SYSTEM SCHEDULE - INDOOR UNIT

	ITEM	MANUFACTURER	AREA & ROOMS	CFM	ELI	ECTRIC	CAL	OPER. WT.	COMMENTS
1	NO.	AND MODEL NO.	SERVED	CFIVI	MCA	FLA	V-Ø-Hz	LBS.	COMMENTS
} 	FC 1	MITSUBISHI MSZ-A24NA	STORAGE	300-560	1.2	.76	208/1/60	23	
	FC 2	MITSUBISHI MSZ-A24NA	STORAGE	300-560	1	.76	208/1/60	37	
	FC 3	MITSUBISHI MSZ-A12NA	LIBRARY	150-350	1	.76	208/1/60	37	
	FC 4	MITSUBISHI MSZ-A24NA	STORAGE	300-560	1	.76	208/1/60	37	
	FC 5	MITSUBISHI MSZ-A24NA	LIBRARY	300-560	1	.76	208/1/60	37	
	4 D44	OA DEEDIGEDANT							

- 1. R410A REFRIGERANT
- 2. PROVIDE CONDENSATE PUMP. ROUTE CONDENSATE LINE TO EXTERIOR.
- 3. UNIT SHALL BE WALL MOUNTED.
- 4. PROVIDE WITH WIRELESS THERMOSTAT

ELECTRIC UNIT HEATER SCHEDULE

SYMBOL		ELECTRIC 200	8 V	ı	MANUFACTURER AND CATALOG NUMBER	REMARKS
	BTUH	KW	PH	HZ		
EUH 1	12600	3.7	1	60	QMARK MUH05021	2
EUH 2	6825	2	1	60	QMARK CWH3404	1, 2
EUH 3	17000	5	1	60	QMARK MUH05-81	2
EUH 4	51,200	15	1	60	QMARK MUH15-8	2
1. PROVIDE	WITH SURF	ACE MOUN	TING ADAPT	ER.		

2. UNIT SHALL HAVE BUILT IN THERMOSTAT.

State of Utah Department of Administrative Services

Division of Facilities
Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114
Phone: (801) 538 - 3018
Fax: (801) 538 - 3267

Internet: http://www.dfcm.state.ut.us

CONSULTANTS



PROJECT NAME & ADDRESS

OGDEN ARMORY HVAC REPLACEMENT

DFCM No. 07181470

Ogden, Utah REVISION MARK DATE PROJECT MANAGER: PC

DRAWN BY:
STAFF

MECHANICAL SCHEDULES

SHEET NO. ME602

EG	UIPM	ENT	S	CH	ED	UL	Ε				
			WIRES			OCPD		RI	REF. NOTES		
		_	6			(1)			~	<u>ن</u>	

	Γ							hane=-					-	- Lar		
								WIRES			00	PD	RE	F. NOTI	ES	
UNIT#	FUNCTION	LOAD	VOLT	PHASE	FULL LOAD AMPS	CONDUIT	NO. SETS	NO.	SIZE	EQUIP. GND (1)	TYPE	AMPS	STARTER	DISCONNECT	ОТНЕК	REMARKS
CU-1	CONDENSING UNIT	17 MCA	240	1	13.60	3/4"	1	2	12	12	СВ	25		2A		
CU-2	CONDENSING UNIT	17 MCA	240	1	13.60	3/4"	1	2	12	12	СВ	25		2A		
CU-3	CONDENSING UNIT	12 MCA	240	1	9.60	3/4"	1	2	12	12	СВ	20		2A		
CU-4	CONDENSING UNIT	17 MCA	240	1	13.60	3/4"	1	2	12	12	СВ	25		2A		
CU-5	CONDENSING UNIT	17 MCA	240	1	13.60	3/4"	1	2	12	12	СВ	25		2A		
EUH-1	ELECTRIC UNIT HEATER	3.6 KVA	240	1	15.00	3/4"	1	2	12	12	СВ	20		2A		
EUH-2	ELECTRIC UNIT HEATER	2 KVA	240	1	8.33	3/4"	1	2	12	12	СВ	20		2A		
EUH-3	ELECTRIC UNIT HEATER	5 KVA	208	1	24.04	3/4"	1	2	8	10	СВ	35		2A		
EUH-4	ELECTRIC UNIT HEATER	15 KVA	208	1	72.12	1"	1	2	2	8	СВ	100		2A		
FC-1	FAN COIL UNITS	.76 FLA	240	1	0.76	3/4"	1	2	12	12	СВ	15	4A			
FC-2	FAN COIL UNITS	.76 FLA	240	1	0.76	3/4"	1	2	12	12	СВ	15	4A			
FC-3	FAN COIL UNITS	.76 FLA	240	1	0.76	3/4"	1	2	12	12	СВ	15	4A			
FC-4	FAN COIL UNITS	.76 FLA	240	1	0.76	3/4"	1	2	12	12	СВ	15	4A			
FC-5	FAN COIL UNITS	.76 FLA	240	1	0.76	3/4"	1	2	12	12	СВ	15	4A			
RTU-1	ROOFTOP AIR CONDITIONER	28.3 MCA	208	3	22.64	3/4"	1	3	10	10	СВ	35		2A		
RTU-2	ROOFTOP AIR CONDITIONER	28.3 MCA	208	3	22.64	3/4"	1	3	10	10	СВ	35		2A		
RTU-3	ROOFTOP AIR CONDITIONER	28.3 MCA	208	3	22.64	3/4"	1	3	10	10	СВ	35		2A		
RTU-4	ROOFTOP AIR CONDITIONER	32.1 MCA	208	3	25.68	3/4"	1	3	8	10	СВ	40		2A		
RTU-5	ROOFTOP AIR CONDITIONER	36.5 MCA	208	3	29.20	3/4"	1	3	8	10	СВ	45		2A		
RTU-6	ROOFTOP AIR CONDITIONER	28.3 MCA	208	3	22.64	3/4"	1	3	10	10	СВ	35		2A		
RTU-7	ROOFTOP AIR CONDITIONER	113 MCA	208	3	90.40	1-1/2"	1	3	1/0	6	СВ	150		2A		
RTU-8	ROOFTOP AIR CONDITIONER	32.1 MCA	208	3	25.68	3/4"	1	3	8	10	СВ	40		2A		
RTU-9	ROOFTOP AIR CONDITIONER	21.9 MCA	208	3	17.52	3/4"	1	3	10	10	СВ	30		2A		
RTU-10	ROOFTOP AIR CONDITIONER	113 MCA	208	3	90.40	1-1/2"	1	3	1/0	6	СВ	150		2A		
RTU-11	ROOFTOP AIR CONDITIONER	32.1 MCA	208	3	25.68	3/4"	1	3	8	10	СВ	40		2A		
RTU-12	ROOFTOP AIR CONDITIONER	36.5 MCA	208	3	29.20	3/4"	1	3	8	10	СВ	45		2A		
UH-1	GAS FIRED UNIT HEATER	3.3 FLA	120	1	3.30	3/4"	1	2	12	12	СВ	15	4A			
UH-2	GAS FIRED UNIT HEATER	3.3 FLA	120	1	3.30	3/4"	1	2	12	12	СВ	15	4A			

1. NON-FUSED DISCONNECT SWITCH 2. FUSED DISCONNECT SWITCH

- 3. BREAKER IN ENCLOSURE
- 4. MANUAL STARTER W/THERMAL OVERLOAD 5. MAGNETIC STARTER
- 6. MAGNETIC STARTER/NON-FUSED DISCONNECT COMBINATION . MAGNETIC STARTER/FUSED DISCONNECT COMBINATION
- . MAGNETIC STARTER/BREAKER COMBINATION
- VARIABLE FREQUENCY DRIVE 10. REDUCED VOLTAGE STARTER
- 1. DIRECT CONNECTION
- 12. RECEPTACLE/SPECIAL PURPOSE OUTLET/ETC. 13. TWO-SPEED STARTER, COORDINATE W/MOTOR TYPE

- A. FURNISHED, INSTALLED, AND CONNECTED UNDER DIVISION 16 B. FURNISHED AND INSTALLED UNDER ANOTHER DIVISION REQUIRING
- **CONNECTION UNDER DIVISION 16.**
- C. FURNISHED UNDER ANOTHER DIVISION BUT INSTALLED AND
- CONNECTED UNDER DIVISION 16. D. FURNISHED, INSTALLED AND CONNECTED UNDER ANOTHER DIVISION.
- CB = CIRCUIT BREAKER THERMAL MAGNETIC CKW = CHILLER KILOWATTS

LARGER THAN PHASE CONDUCTOR.

NOTE 1: PER 250.122(A), EQUIPMENT GROUND IS NOT REQUIRED TO BE

1. CONSULT ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL LIGHTING FIXTURES.

GENERAL NOTES

- 2. VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH IN. CONSULT ALL APPLICABLE CONTRACT DRAWINGS AND SHOP DRAWINGS TO INSURE NEC CODE CLEARANCES REQUIRED AROUND ALL ELECTRICAL EQUIPMENT.
- CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF EQUIPMENT FURNISHED UNDER DIVISION 15 WITH APPROVED MECHANICAL SHOP DRAWINGS BEFORE BEGINNING ROUGH IN.
- 4. SEE SECTION 16510 OF THE SPECIFICATION REQUIRED COORDINATION MEETINGS WITH MECHANICAL AND CEILING CONTRACTORS.
- 5. SEE APPLICABLE SHOP DRAWINGS FOR ROUGH IN LOCATION OF ALL EQUIPMENT, WIRING DEVICES, ETC. WHERE APPLICABLE MOUNT ALL WIRING DEVICES ABOVE BACK SPLASH EXCEPT THOSE SERVING UNDER COUNTER EQUIPMENT.
- 6. SEE SPECIFICATION FOR ENERGY SAVING LAMP AND BALLAST REQUIREMENTS.
- 7. FINISHES OF ALL LIGHT FIXTURES SHALL BE AS SELECTED BY ARCHITECT.
- 8. THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO PIPING, DUCTS, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THRU ELECTRICAL ROOMS OR SPACES, OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN
- 9. ELECTRICAL BOXES SHALL NOT BE LOCATED IN MASONRY COLUMNS IN BRICK WALLS OR IN GROUTED CELLS ADJACENT TO OPENINGS. COORDINATE LOCATION OF BOXES WITH MASONRY
- 10. ALL PENETRATIONS OF FIRE RATED FLOORS, WALLS, AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL TO MAINTAIN FIRE RATING OF SURFACE PENETRATED.
- 11. CIRCUITS EXTENDING OVER 70' FOR 120 VOLT AND 165' FOR 277 VOLT 20 AMP CIRCUITS SHALL BE RUN WITH MINIMUM #10 CONDUCTORS.

ELECTRICAL SYMBOL SCHEDULE

SEE FIXTURE SCHEDULE FOR TYPE, MOUNTING AND WATTAGE.
HEIGHT MEASURED TO CENTER LINE OF THE BOX FROM THE FINISH FLOOR.
REFER TO DRAWINGS FOR DIRECTIONAL ARROWS.
SUBSCRIPT KEYS SWITCH TO FIXTURES CONTROLLED.
NEMA TYPE 'ND' NON-FUSED UNLESS NOTED 'F' (FUSED). USE 'HD' 480 V.
HEIGHT TO BE THE LOWER OF EITHER 80" A.F.F. OR 6" BELOW CEILING.
PROVIDE H.O.A. AND S.S. PUSHBUTTONS AS REQUIRED.

STANDARD MOUNTING HEIGHT UNLESS OTHERWISE NOTED ON PLANS

SYMBOL DESCRIPTION

CLOCK OUTLET

CLOCK/SPEAKER COMBINATION

		HEIGHT				52501(III 11011
	ONE CIRCUIT, TWO WIRE HOME RUN TO PANEL				O)	JUNCTION BOX ('F' IN FLOOR)
#	2 CIRCUIT, 3 WIRE, COMMON NEUTRAL HOME RUN				70/	MOTOR OUTLET
#	3 CIRCUIT, 4 WIRE, COMMON NEUTRAL HOME RUN				P	PHOTO-ELECTRIC CONTROL
·	CONDUIT RUN CONCEALED IN WALL OR CEILING				TC	TIME CLOCK
	CONDUIT RUN CONCEALED IN FLOOR OR GROUND					PUSHBUTTON
	CONDUIT UP			1 1		NON-FUSED DISCONNECT SWITCH
	CONDUIT DOWN				 F	FUSED DISCONNECT SWITCH
	CONDUIT STUB LOCATION	CAP CONDUIT			<u></u>	MANUAL STARTER THERMAL OVERLOAD SWITCH WITH P
	CABLE TRAY	AS NOTED				MAGNETIC STARTER
0	CEILING LIGHT FIXTURE	CEILING	1.			MAGNETIC STARTER / DISCONNECT COMBINAT
Ю	WALL LIGHT FIXTURE	AS NOTED	1.		VFD	VARIABLE FREQUENCY DRIVE
	RECESSED DOWNLIGHT FIXTURE	CEILING	1.			PANEL BOARD
0	FLUORESCENT LIGHT FIXTURE	AS NOTED	1			MAIN DISTRIBUTION PANEL
	FLUORESCENT EGRESS LIGHT FIXTURE	AS NOTED	UNSWITCHED			TELEPHONE TERMINAL BOARD
6	AREA LIGHT POLE AND FIXTURE	CONCRETE BASE	SEE DIAGRAM			BELL
\bigcirc	FLOOD OR TRACK FIXTURE	AS NOTED				CHIME
\otimes	CEILING MOUNTED EXIT LIGHT	CEILING	1.3.8.		<u> </u>	FIRE ALARM MANUAL STATION
\otimes	WALL MOUNTED EXIT LIGHT	AS NOTED	1.3.8.			FIRE ALARM SIGNAL HORN/STROBE PROJECTO
\$	SINGLE POLE SWITCH	+4'-0"	2.		<u> </u>	FIRE ALARM SIGNAL HORN/STROBE
\$°	SINGLE POLE SWITCH	+4'-0"	4. 2.		<u> </u>	FIRE ALARM SIGNAL SPEAKER/STROBE
\$ ³	THREE-WAY SWITCH	+4'-0"	2.			SMOKE DETECTOR
\$ ⁴	FOUR-WAY SWITCH	+4'-0"	2.		<u> </u>	DUCT SMOKE DETECTOR
\$ ^K	KEY OPERATED SWITCH	+4'-0"	2.		<u> </u>	HEAT DETECTOR
\$P	SWITCH WITH PILOT LIGHT	+4'-0"	2.			FIRE/SMOKE DAMPER
\$ ^D	VARIABLE INTENSITY SWITCH	+4'-0"	2.			DOOR HOLDER
\$ [™]	TIMER SWITCH	+4'-0"	2.		F _S	FLOW SWITCH
9 •	MOMENTARY CONTACT SWITCH, CENTER POSITION OFF	+4'-0"	2.		T _S	
\$	OCCUPANCY SENSOR	CEILING	2.		W _F	TAMPER SWITCH
		+4'-0"				WATER FLOOD INDICATOR
H	OCCUPANCY SENSOR		2.		<u>&</u> R	O.S. & Y. VALVE
	POWER PACK	CEILING	SEE DIAGRAM, SPEC.			FIRE ALARM RELAY
A T	AUTOMATIC RELAY PACK	CEILING	SEE DIAGRAM. SPEC.		CM DATE	FIRE ALARM CONTROL MODULE
	LOW VOLTAGE TRANSFORMER DUDLEY RECEDIACIE UPPER OUTLET	+16" OR			MM	FIRE ALARM MONITOR MODULE
	DOPLEX RECEPTACLE SWITCH CONTROLLED	AS NOTED +16" OR	9. 11.		S	FIRE ALARM STROBE
0	SIMPLEX RECEPTACLE	+16" OR	9. 11.		● D	DURESS PUSHBUTTON
0	DUPLEX RECEPTACLE	AS NOTED	9. 11.			SECURITY SYSTEM DOOR SWITCH
⊕ _A	DUPLEX RECEPTACLE		9.		⊕ 2	SECURITY SYSTEM OVERHEAD DOOR SWITCH
⊕ w	ELECTRIC WATER COOLER RECEPTACLE	+24" OR	SEE DIAGRAM		MD	MAGNETIC SHEAR LOCK
₩P	WEATHERPROOF RECEPTACLE	AS NOTED +16" OR	2. 9.		<u> </u>	SECURITY SYSTEM KEYED ACCESS SWITCH
⇒lG	ISOLATED GROUND RECEPTACLE	AS NOTED +16" OR	9. 11.		\bigcirc	INFRARED SENSOR
9	GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE	AS NOTED +16" OR	9. 11.		₩	SECURITY MOTION DETECTOR
#	DUPLEX RECEPTACLE EMERGENCY POWER (RED)	AS NOTED +16" OR	9. 11.		<u> </u>	GLASS BREAK DETECTOR
#	FOURPLEX RECEPTACLE	AS NOTED +16" OR	9. 11.		<u>(ES)</u>	ELECTRIC DOOR STRIKE
*	FOURPLEX RECEPTACLE EMERGENCY POWER (RED)	AS NOTED	9. 11.		CR	ACCESS CONTROL CARD READER
<u>•</u>	FLOOR OUTLET WITH 20A DEVICE	FLOOR				CLOSED CIRCUIT TELEVISION CAMERA
OV	MULTIPLE SERVICE FLOOR BOX	FLOOR			•	DOOR POSITION INDICATING SWITCH
	SPECIAL PURPOSE OUTLET	+16" OR AS NOTED	10. WITH CAP. 11.		9 #	SOUND SYSTEM SPEAKER
+	CORD DROP	, 409 50	SEE DIAGRAM		● IC	INTERCOM SPEAKER
	PLUGMOLD	+46" OR AS NOTED			● _V	VOLUME CONTROL
	TELEVISION OUTLET	+16" OR AS NOTED	11.		● м	MICROPHONE OUTLET
	DATA OUTLET	+16" OR AS NOTED	9. 11.		● M	MICROPHONE FLOOR OUTLET
\triangleright	TELEPHONE OUTLET	+16" OR AS NOTED	9. 11.		M	MICROPHONE CEILING OUTLET
	TELEPHONE/DATA OUTLET	+16" OR AS NOTED	9. 11.			SOUND EQUIPMENT CABINET
\bigcirc	TELEPHONE OUTLET	FLOOR			842	ARCHITECTURAL ROOM NUMBER
>	CALL SWITCH	+4'-0"	2.		A	LIGHT FIXTURE (LETTER DESIGNATES TYPE)
10		. 7' 0"		ı İ	/EQ\	

	9. COORDII 10. SUBSCR 11. HEIGHT * TYPICAL SY	ARROWS DENOTE A DOUBLE FACE UNIT. NATE WITH MILLWORK SHOP DRAWINGS AND ELEVATIO RIPT DENOTES NEMA CONFIGURATION. MEASURED TO BOTTOM OF THE BOX FROM FINISH F MBOL SCHEDULE. SOME SYMBOLS MAY NOT BE USI OF DRAWINGS.	LOOR.	IGHT.
	STANDARD N	MOUNTING HEIGHT UNLESS OTHERWISE NOTED ON P	LANS	
ΓES	SYMBOL	DESCRIPTION	MOUNTING HEIGHT	NOTES
	\bigcirc	JUNCTION BOX ('F' IN FLOOR)	AS NOTED	
	<i>\oldot\oldo</i>	MOTOR OUTLET	TO SUIT EQUIP.	
	P	PHOTO-ELECTRIC CONTROL	AS NOTED	TORK 2000A
	TC	TIME CLOCK	+5'-0"	2.
		PUSHBUTTON	+4'-0"	2.
		NON-FUSED DISCONNECT SWITCH	+5'-0"	5.
	F	FUSED DISCONNECT SWITCH	+5'-0"	5.
	\$ ^T	MANUAL STARTER THERMAL OVERLOAD SWITCH WITH PILOT LIGHT	+4'-0"	2.
		MAGNETIC STARTER	+5'-0"	7.
		MAGNETIC STARTER / DISCONNECT COMBINATION	+5'-0"	
	VFD	VARIABLE FREQUENCY DRIVE	+6'-6"	
		PANEL BOARD	TOP AT +6'-0"	
		MAIN DISTRIBUTION PANEL	, , ,	
		TELEPHONE TERMINAL BOARD		
M		BELL	+7'-6"	
		CHIME	+7'-6"	
	F	FIRE ALARM MANUAL STATION	+4'-0"	2.
	DH(FIRE ALARM SIGNAL HORN/STROBE PROJECTORS	+6'-8"	6.
	H	FIRE ALARM SIGNAL HORN/STROBE	+6'-8"	6.
	E	FIRE ALARM SIGNAL SPEAKER/STROBE	+6'-8"	6.
	⊚s	SMOKE DETECTOR	CEILING	
	⊘ _D	DUCT SMOKE DETECTOR		MTD. IN DUCT
	⊚н	HEAT DETECTOR	CEILING	
	D	FIRE/SMOKE DAMPER		
	\bigcirc	DOOR HOLDER	AS NOTED	
	Fs	FLOW SWITCH		
	T _S	TAMPER SWITCH		
	W _F	WATER FLOOD INDICATOR		
	$\overline{\mathbb{A}}$	O.S. & Y. VALVE		SEE DIAGRAM
SPEC.	R	FIRE ALARM RELAY		
SPEC.	СМ	FIRE ALARM CONTROL MODULE		
	MM	FIRE ALARM MONITOR MODULE		
	S	FIRE ALARM STROBE	+6'-8"	6.
	● _D	DURESS PUSHBUTTON	+4'-0"	
		SECURITY SYSTEM DOOR SWITCH	DOOR JAMB	
	⊕ 2	SECURITY SYSTEM OVERHEAD DOOR SWITCH	CEILING	MOUNT AS PER. MAN
М	(ML)	MAGNETIC SHEAR LOCK		
	A	SECURITY SYSTEM KEYED ACCESS SWITCH	+4'-0"	2.
	\Diamond	INFRARED SENSOR	AS NOTED	
		CECURITY MOTION DETECTOR		MOUNT AS DED MAN

PROJECT NAME & ADDRESS

State of Utah Department of Administrative Services

Salt Lake City, Utah 84114

Internet: http://www.dfcm.state.ut.us

CONSULTANTS

WHW

ENGINEERING INC.

SANDY, UTAH 84070 (801)466-4021, FAX 466-8536

Division of Facilities

Construction & Management 4110 State Office Building

Phone: (801) 538 - 3018 Fax: (801) 538 - 3267

OGDEN ARMORY HVAC REPLACEMENT

MOUNT AS PER. MAN

CIRCUIT TO 120V

CEILING

+4'-0"

AS NOTED

+8'-0" OR AS NOTED

AS NOTED

FLOOR

CEILING

+4'-0" 2.

+16" 11.

DFCM No. 07181470

Ogden, Utah

MARK	DATE	REVISION

PROJECT MANAGER: DRAWN BY: **STAFF** CHECKED BY: A JULY 21, 2008 WHW JOB NO.: 07054

SYMBOLS, SCHEDULES **AND NOTES**

EG101

INDEX OF ELECTRICAL DRAWINGS

EG101 SYMBOLS, SCHEDULES AND NOTES

EP100 POWER PLAN BASEMENT

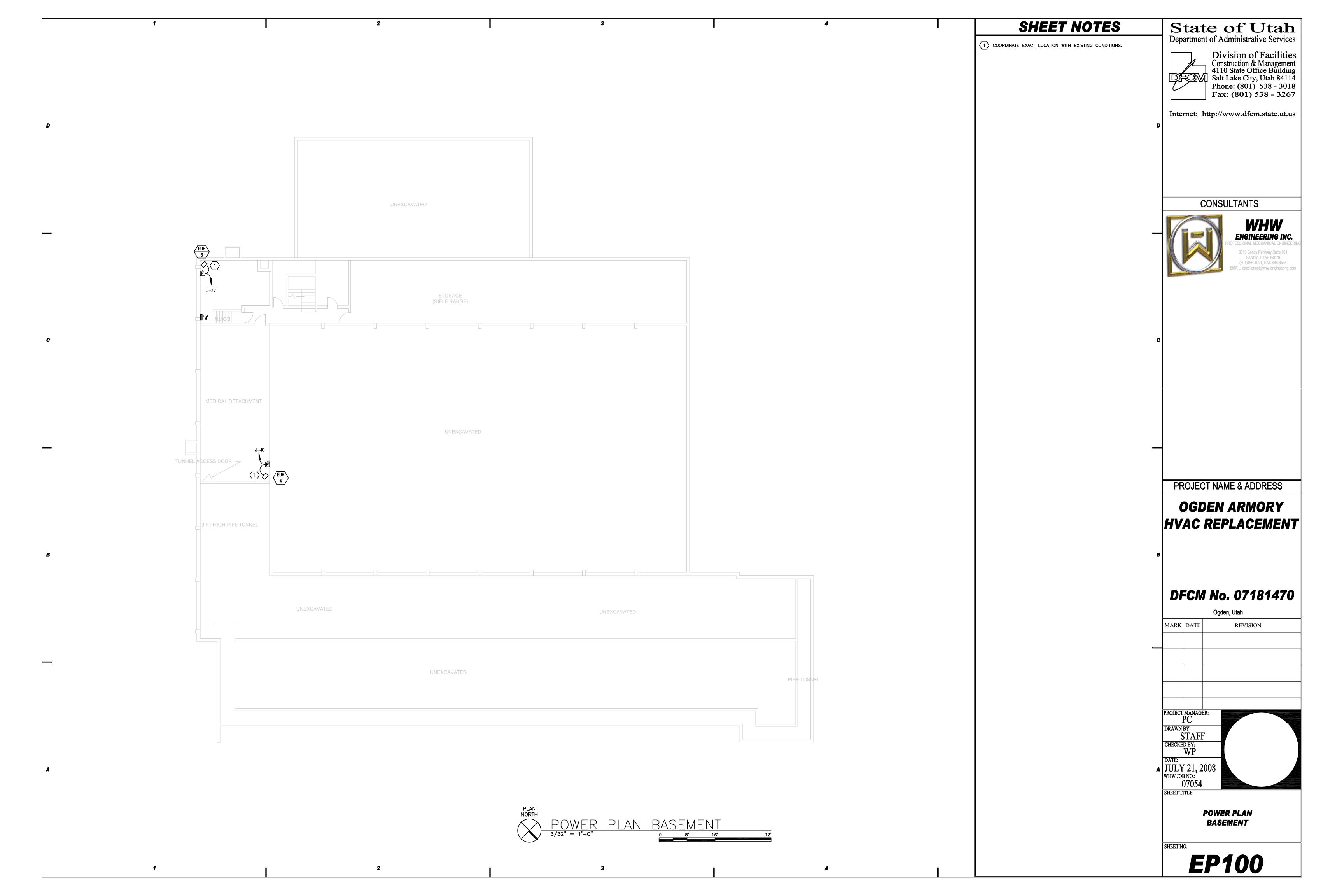
EQUIPMENT NUMBER

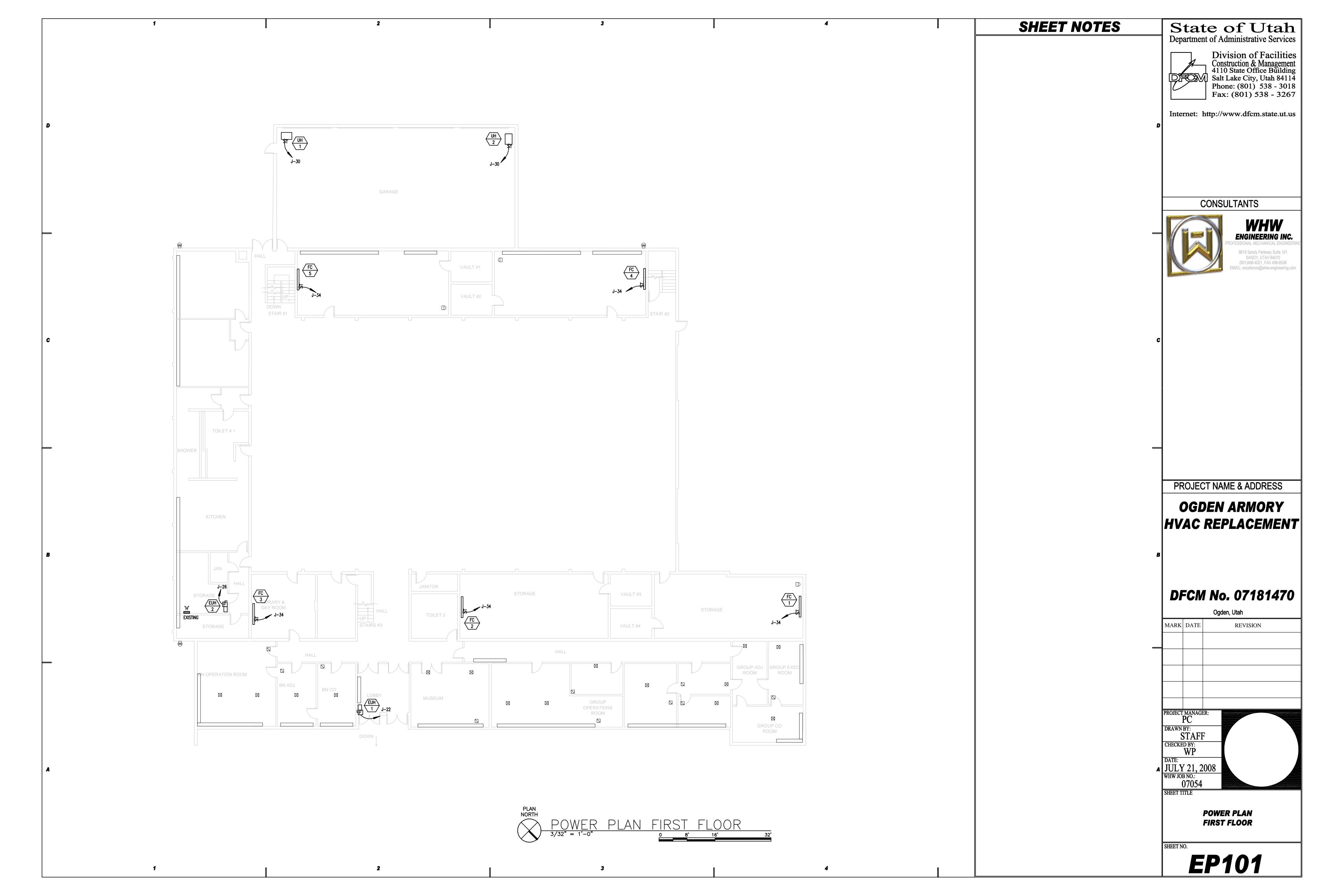
EP101 POWER PLAN FIRST FLOOR EP201 POWER PLAN SECOND FLOOR EP301 ELECTRICAL ROOF PLAN

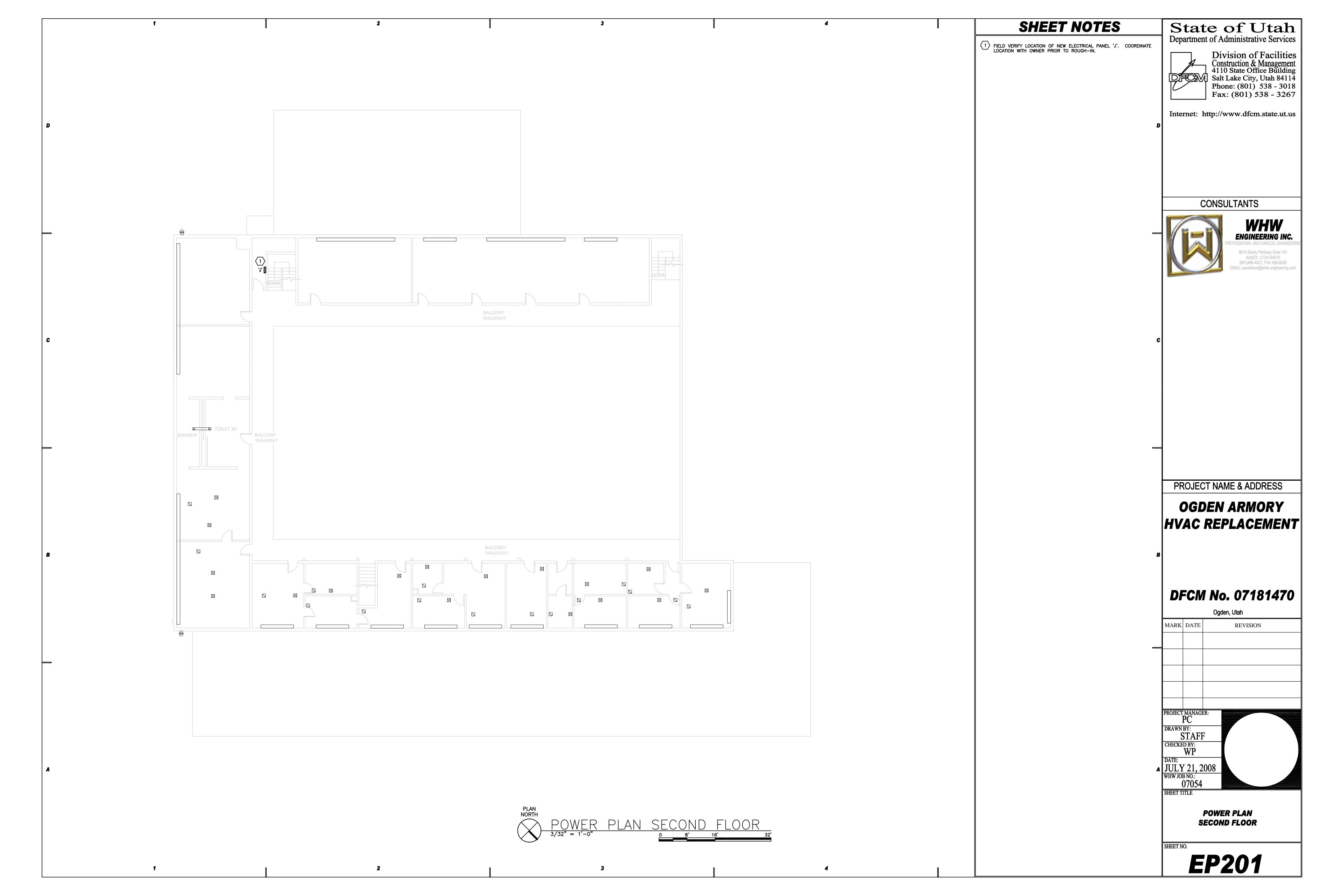
EX101 ONE-LINE DIAGRAM AND PANELBOARD SCHEDULES EX301 ELECTRICAL DIAGRAMS

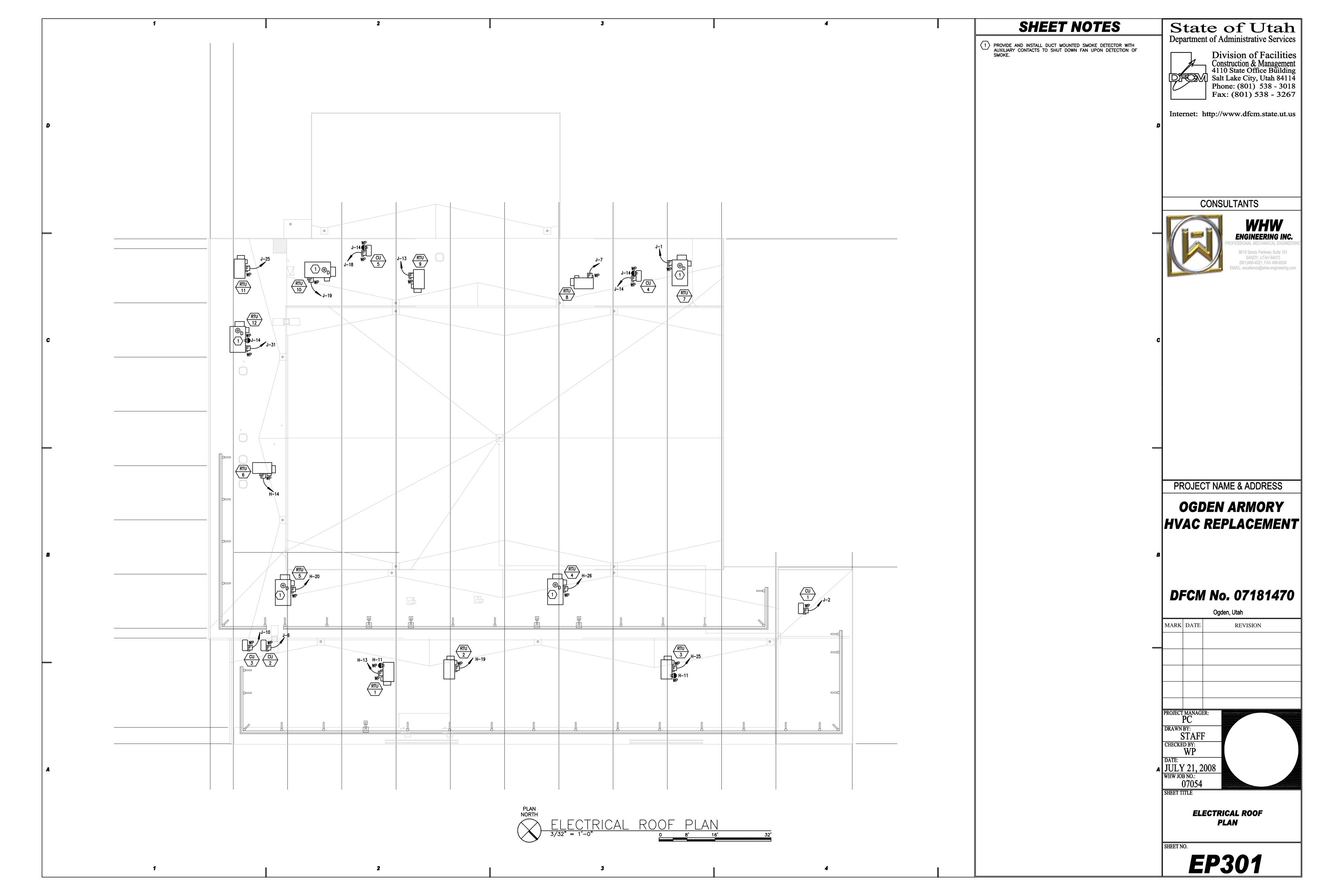
+7'-6"

+7'-6"







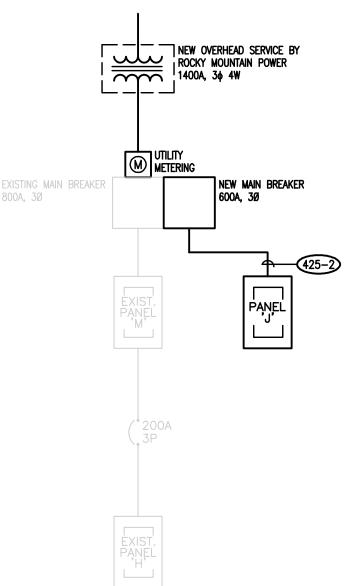


PANEL	H (EXISTING)				TYPE	NQ	OD	-	120/2	.08	VOLTS		;	3	PH	4
MOUNTING - -	FLUSH X SURFACE			DIMENS	IONS - -	20 6	. W . D (in.) . H		LOCATION _		STORAG	SE			MAINS	X LUGS BREAKER SUBFEED LUGS ISO GROUND 200% NEUTRAL
					-		· 	BRANCH	BREAKERS							
				WIRE	CIR.	LEF	T PHASE LO	DAD	RIGH	T PHASE L	.OAD	CIR.			WIRE	
	ITEM	AMPS	POLE	SIZE	NO.	A	В	С	A	В	С	NO.	AMPS	POLE	SIZE	ITEM
FLAGPOLE L	IGHT ROOF*	20	1	12	1	260						2	20	1		SPARE
SPARE		20	1		3							4	20	1		SPARE
SPARE		20	1		5							6	20	1		SPARE
SPARE		20	1		7							8	20	1		SPARE
SPARE		20	1		9							10	20	1		SPARE
LOW ROOF A	C UNITS *	20	1	12	11			540			540	12	20	1	12	LOW ROOF AC UNITS *
RTU-1		35	3	10	13	2716			2716			14	35	3	10	RTU-6
		-	•	•	15		2716			2716		16			-	-
			•	•	17			2716			2716	18	•			
RTU-2		35	3	10	19	2716			3502			20	45	3	8	RTU-5
		-	•	•	21		2716			3502		22	•		-	•
-		-	•	•	23			2716			3502	24	-	-	-	-
RTU-3		35	3	10	25	2716			3080			26	40	3	8	RTU-4
		-	-	-	27		2716			3080		28	-	-	-	•
-		-	-	-	29			2716			3080	30	-	-	-	-
SPACE ONLY					31							32				SPACE ONLY
SPACE ONLY	, <u> </u>				33							34				SPACE ONLY
SPACE ONLY					35							36				SPACE ONLY
SPACE ONLY	,				37							38				SPACE ONLY
SPACE ONLY					39							40				SPACE ONLY
SPACE ONLY	, <u> </u>				41							42				SPACE ONLY
						8408	8148	8688	9298	9298	9838					
* EXISTING C	RCUIT				Γ	17706	17446	18526	TOTAL			-				CONNECTED LOAD TOTAL
					Ī	148	145	154	AMPS/PHAS	E						53678 VA

PANEL	J		_		TYPE	NC	OD	_	120	/208	VOLTS			3	PH		4	_ 1
MOUNTING				BULENS				-	LOGATION		_				-	X	LUGS	_
MOUNTING	FLUCU			DIMENS	ions	20	w		LOCATION					•	MAINS		BREAKER	
x	_ FLUSH SURFACE					20 6	W		AMP		600				MAINS		SUBFEED LUGS ISO GROUND	
	_ SURFACE						D (in.)		AMP								200% NEUTRAL	
							-	BRANGII	DEAKER								. ZOU // NEO INCAE	
		1		WIDE	CID	1.51	FT PHASE LO		BREAKER	S HT PHASE L	04D	CIR.			WIDE	1		_
17	EM	AMPS	POLE	WIRE SIZE	CIR. No.	A	B	C	A	B B	C	NO.	AMPS	POLE	WIRE		ITEM	
	<u> </u>	150	3	1/0	1	10843	-	- *	1414	-	├	2	25	2	12	CU-1		_
		-	-	-	3		10843		 ''''	1414		4	-	-	-	-		_
•		٠.		-	5			10843			1414	6	25	2	12	CU-2		_
RTU-8		40	3	8	7	3080			1414			8	-	-	-	-		_
-		٠.	-	-	9		3080			998		10	20	2	12	CU-3		_
		١.	-	-	11			3080			998	12	-	-	-	-		
RTU-9		30	3	10	13	2101			1414			14	25	2	12	CU-4		
•			•	-	15		2101			1414		16		-	-	-		
•			•	-	17			2101			1414	18	25	2	12	CU-5		
RTU-10		150	3	1/0	19	10843			1414			20	-	-	-	-		
•		ļ ·	•	-	21		10843			1560		22	20	2	12	EUH-1		_
<u> </u>			-	-	23			10843			1560	24	-	-	<u> </u>	-		
RTU-11		40	3	8	25	3080			866			26	20	2	12	EUH-2		_
•		ļ ·	-	-	27		3080	0000		866	700	28	-	-	-	-		
- RTU-12		45	-	-	29	2500		3080			792	30 32	20	1	12	UH-1, 2 SPARE		_
-		45	3	8	31 33	3502	3502	 	-	456	1	34	20 15	1	12	FC-1,2,3	145	_
-		+:	-	-	35		3302	3502	-	730	540	36	20	1	12		OUTLETS	_
EUH-3		35	2	8	37	2500	 	- 5502	-	-		38	20	1	 "	SPARE		_
		-	-	-	39		2500			7500		40	100	2	2	EUH-4		_
SPACE ONLY					41						7500	42	-	-	-	-		_
					1	35949	35949	33449	6522	14208	14218							_
						42471	50157	47667	TOTAL	•	•	•				CONNE	CTED LOAD TOTAL	
						354	418	397	AMPS/PHA	SE							140296.072 VA	

CONI FOR	COF DUCTOR TRANSFOI	PPER & O.C. RMER P	PROT. RIMARY	COPPER CONDUCTOR & O.C. PROT. FOR TRANSFORMER SECONDARY $\triangle 480/208/120 \Upsilon$										
TRANS KVA	O.C. PROT.	TYPE COND.*	GND. COND.	O.C. PROT.	TYPE COND.	COND. AMPS	SETS	CONDI QUAN.	JCTOR SIZE	CONDUIT SIZE	EQ. GND. COND.			
30	50	38	8	100	T42-1	104	1	4	2	1-1/4"	8			
45	70	34	4	175	T43X-1	180	1	4	3/0	2"	6			
75	125	31	2	225	T425-1)	232	1	4	250	2-1/2"	4			
112.5	175	32X	1/0	400	T44X-2	416	2	4	4/0	2-1/2"	3			
150	300	335	2/0	600	T440-2	608	2	4	400	3"	1			
225	400	350	2/0	800	T435-3	840	3	4	350	3"	1/0			
300	600	325-2	3/0	1200	T440-4	1216	4	4	400	3"	3/0			
500	800	350-2	3/0	1600	T450-5	1720	5	4	500	4"	4/0			
750	1500	335-5	3/0	3000	T450-9	3096	9	4	500	4"	400			
	DUCTOR FRANSFOI					r trai	NSFOR	MER SI	:. PROT ECONDA 0/208/	RY				
TRANS KVA	O.C. PROT.	TYPE COND.*	GND. COND.	O.C. PROT.	TYPE COND.	COND. AMPS	SETS	CONDI QUAN.	JCTOR SIZE	CONDUIT SIZE	EQ. GND. COND.			
30	50	38	8	100	T52-1	104	1	5	2	1-1/2"	8			
45	70	34	4	175	(T53X-1)	180	1	5	3/0	2-1/2"	6			
75	125	31	2	225	(1525-1)	232	1	5	250	3"	4			
112.5	175	32X	1/0	400	T54X-2	416	2	5	4/0	2-1/2"	3			
150	300	335	2/0	600	T540-2	608	2	5	400	3-1/2"	1			
225	400	350	2/0	800	(1535-3)	840	3	5	350	3"	1/0			
300	600	325-2	3/0	1200	T540-4	1216	4	5	400	3"	3/0			
500	800	350-2	3/0	1600	(1550-5)	1720	5	5	500	4"	4/0			
750	1500	335-5	3/0	3000	T550-9	3096	9	5	500	4"	400			
* SEE	SCHEDULE	FOR CON	IDUIT AND	WIRE SIZE				-		-				

<u> </u>		_		TYPE	NC	OD	_	120	/208	VOLTS		3	3	PH	4 W
NTING			DIMENS	SIONS				LOCATION		BASEMEN	NT		•		X LUGS BREAKER
X SURFACE						. W . D (in.) . H		AMP		1200				MAINS	SUBFEED LUGS ISO GROUND 200% NEUTRAL
						•	BDANCH	BREAKER	<u>e</u>						200% NEUTRAL
			WIRE	CIR.	I EI	FT PHASE LO			HT PHASE L	OAD	CIR.			WIRE	
ITEM	AMPS	POLE	SIZE	NO.	A	В	C	A	В	C	NO.	AMPS	POLE	SIZE	ITEM
E	100	3		1				5730			2	70	3		PANEL 'E' *
	٠.	-	-	-				i	4580				-	-	-
	-	-	-	-						4580		-	-	-	-
L 'D' *	90	3		3	9810			6510			4	70	3		PANEL 'C' *
		•	•			8430			5440			•	•	•	•
	-	-		•			7580			4520		•	•	•	•
E	100	3		5							6	100	3		SPARE
	-	-		-								•	•		•
				-							<u> </u>	•			-
L'A'*	125	3		7	10460			16100			8	175	3		PANEL 'B' *
	-	-	-	-		11000			13510		· .	•	-	-	-
	<u> </u>	-	•	-			11720			14670	<u> </u>	•	-		-
L'H'*	200	3		9	22960			16700			10	200	3		PANEL 'G' *
	<u> </u>	-	•	-		21692			17500		<u> </u>	•	•		•
	-	-	-	-			21804			12200		•	-	-	-
L 'BR' *	200	3		11	10330						12	225	3		SPARE
	+-	-		-		11890					·	•	•	-	•
	-	-	•	- 40			9910	<u> </u>			•	-	-	-	· ·
E	225	3		13			<u> </u>	<u> </u>			14	225	3		SPARE
	+ -	-	-	-			 	-		-	<u> </u>	•	•	-	•
		-	•		ESECO	E2042	E4044	45040	44020	25070	<u> </u>	٠	•	•	ļ.
STING CIRCUIT					53560 98600	53012 94042	51014 86984	45040 TOTAL	41030	35970	J				CONNECTED LOAD TOTAL
TING CIRCUIT					822	784	725	AMPS/PHA	QE .						279626 VA
					922	104	149	T www.girna	VE				FOLIP	RATING	
NAME: OGDEN ARM	ORY												22,000		AMPS RMS SYM.



ONE-LINE DIAGRAM
NO SCALE

State of Utah Department of Administrative Services



COPPER CONDUCTOR & CONDUIT SCHEDULE

AMP.

335

600

800

800

900

1000

1000

1200

1500

2000

* 200% NEUTRAL

2500 2520 6

3000 3040 8

IN PARALLEL RUNS SIZE GND. COND. IN ACCORDANCE WITH NEC PARA. 250-122.

GND. CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE CONDUCTORS

400

 350
 380
 3-1/2"
 3
 500
 XHHW
 3

 450
 380
 3-1/2"
 4
 500
 XHHW
 3

 550
 380
 3-1/2"
 5
 500
 XHHW
 3

COPPER
CONDUCTOR & CONDUIT SCHEDULE
FOR PARALLEL RUNS

 TYPE
 MAX. O.C. PROT.
 COND. AMPS
 SETS QUAN.
 CONDUCTOR SIZE
 CONDUIT EQ. GND. COND.

 325-2)
 600
 510
 2
 3
 250
 2-1/2"
 1

510 2 4 250 2-1/2" 1 510 2 5 250 2-1/2" 1

760 2 3 500 3" 1/0

760 2 4 500 4" 1/0 760 2 5 500 4" 1/0

930 3 4 350 3"

930 3 5 * 350 3"

1200 | 1240 | 4 | 4 | 350 | 3" 1200 | 1240 | 4 | 5 | 350 | 3"

1600 1675 5 5 400 3"

1600 1680 4 4 600 4"

4000 4180 11 4 500

1260 3

4 400 3"

3 400 3"

4 600 4"

4 400 3"

4 600 4"

4 500 4"

2/0

4/0

4/0

250

350

400

500

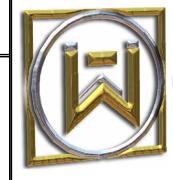
3/4"

COND. CONDUCTOR INSUL— EQ. GND. SIZE QUAN. SIZE ATION COND.

Division of Facilities Construction & Management 4110 State Office Building Salt Lake City, Utah 84114 Phone: (801) 538 - 3018 Phone: (801) 538 - 3018 Fax: (801) 538 - 3267

Internet: http://www.dfcm.state.ut.us

CONSULTANTS



WHW ENGINEERING INC. SANDY, UTAH 84070 (801)466-4021, FAX 466-8536

PROJECT NAME & ADDRESS

OGDEN ARMORY HVAC REPLACEMENT

DFCM No. 07181470

Ogden, Utah

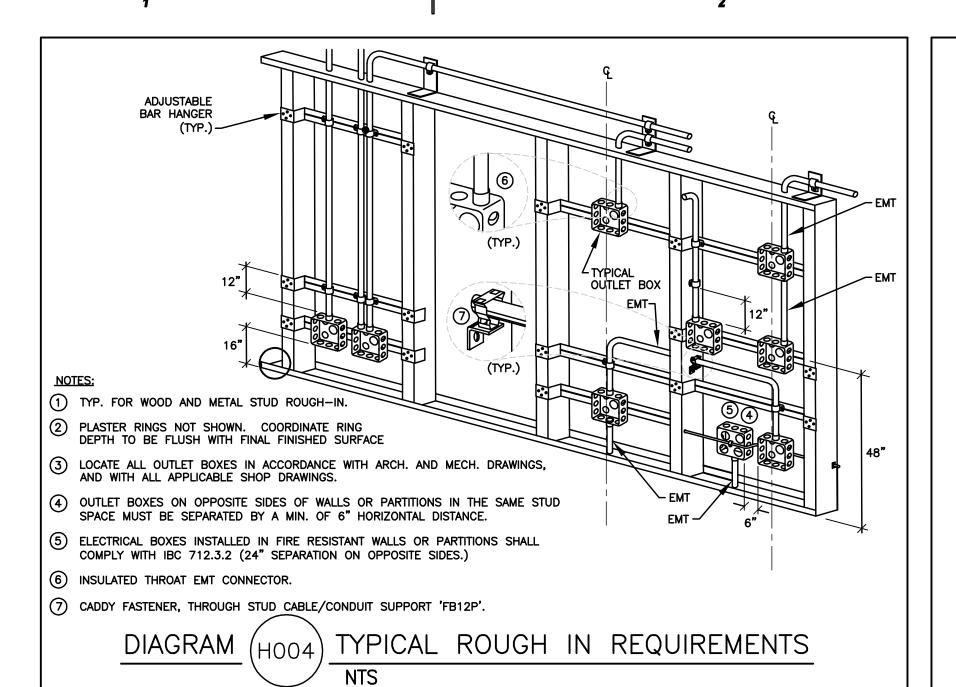
MARK	DATE	REVISION
PROJECT	MANAGI	ER:

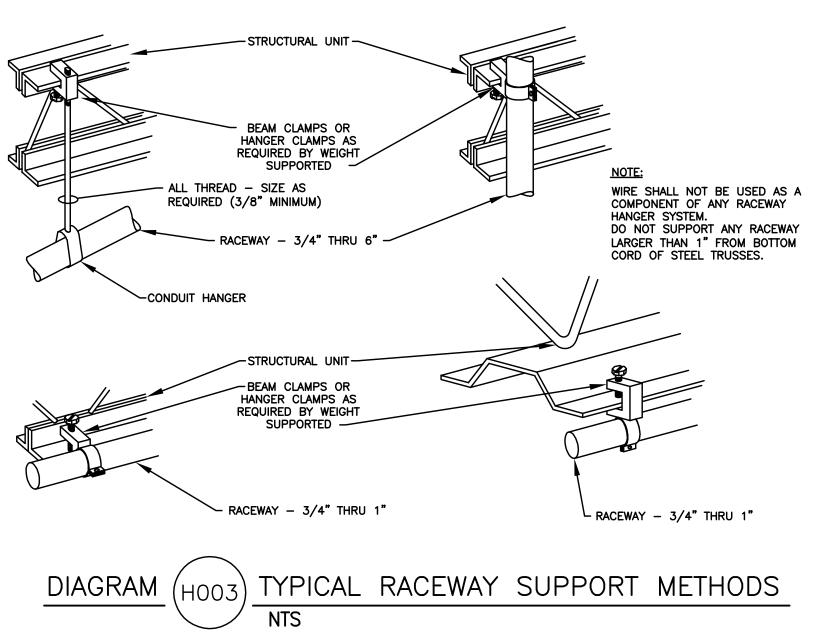
DRAWN BY: STAFF CHECKED BY: WP A JULY 21, 2008 WHW JOB NO.: 07054 SHEET TITLE

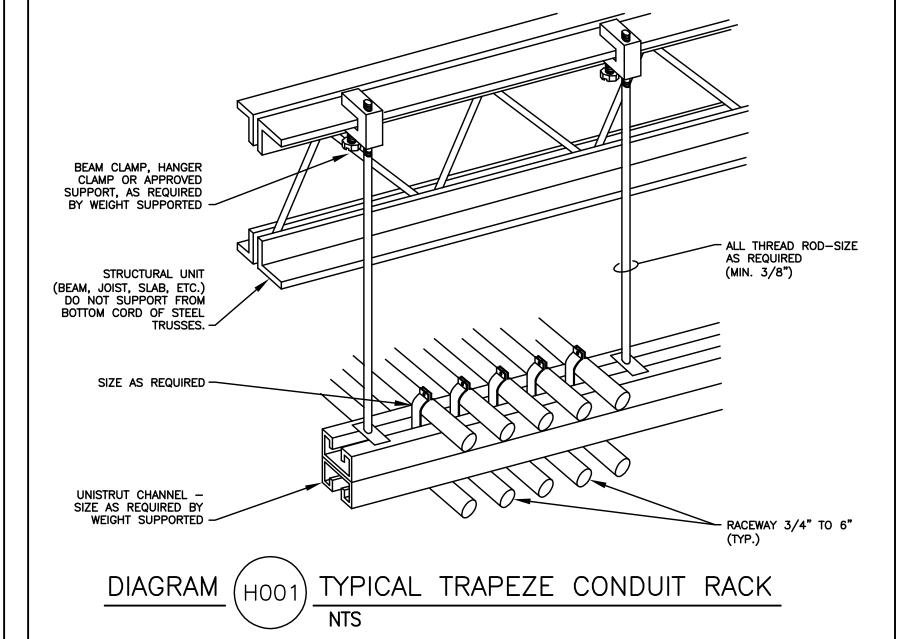
> **ONE-LINE DIAGRAM AND PANELBOARD SCHEDULES**

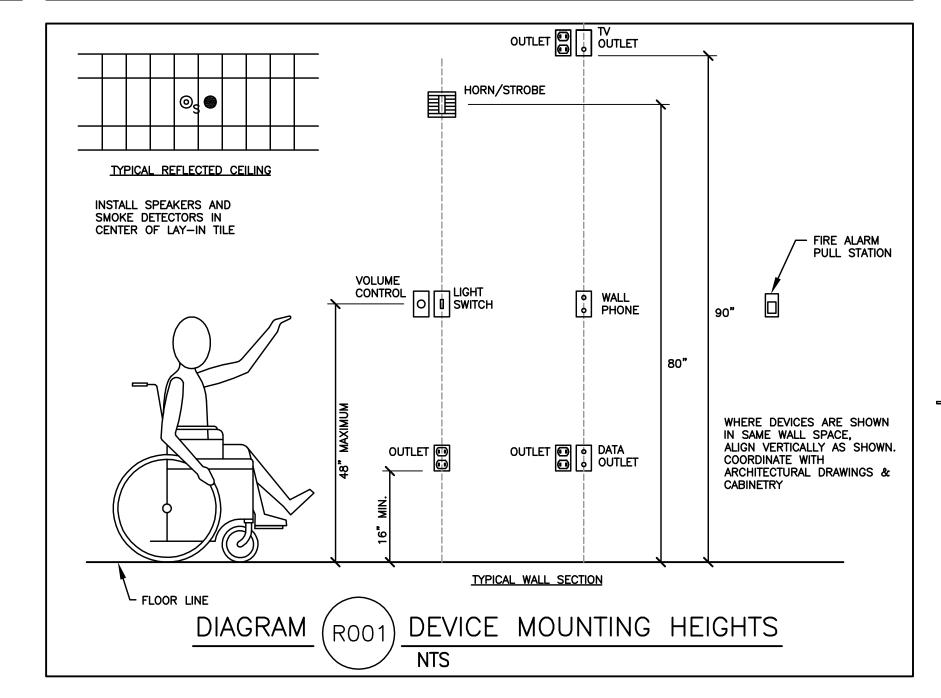
EX101

[NET ROOT	W OVERHEAD SERVICE BY CKY MOUNTAIN POWER 100A, 3¢ 4W
KISTING MAIN BREAKER 100A, 3Ø	UTILITY METERING	NEW MAIN BREAKER 600A, 3Ø
	EXIST. PANEL M	425–2 PANEL
	(*200A ,3P	
	EXIST. PANEL H	









State of Utah Department of Administrative Services



Internet: http://www.dfcm.state.ut.us

CONSULTANTS



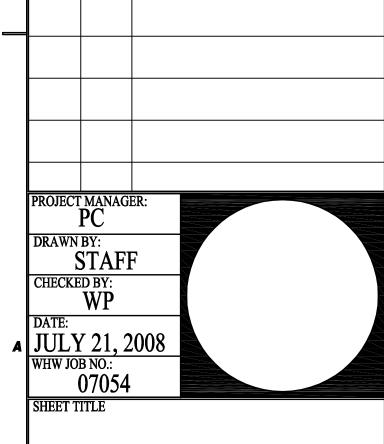
PROJECT NAME & ADDRESS

OGDEN ARMORY HVAC REPLACEMENT

DFCM No. 07181470

REVISION

Ogden, Utah



ELECTRICAL DIAGRAMS

SHEET NO.

MARK DATE

EX301